# BIDDING REQUIREMENTS for PURCHASING

# NOTICE AND INFORMATION FOR BIDDERS

# Attachment A: Bid Breakdown & Schedule

Bidder:				
DASNY (	Contact:	Nicole White, Procurement Adr nwhite@dasny.org	ministrat	or
Request	for Information (RFI's):	RFI's due May 6, 2024. Submitgraffeo@dasny.org. Response DASNY's website via addendati is the responsibility of the Bio	es will b a no late	e posted to er than May 9, 2024
Product	Required By:	Asap based on product lead tim	ne.	
Descripti	on:	Furnish, Deliver and Install Aud	dio-Visua	al Equipment
Bid Ope	n Location:	DASNY, Corporate Headquart Albany, NY 12207	ers, 515	5 Broadway,
Bid Ope	n Date and Time:	Thursday, May 16, 2024, at 2:	30PM.	
Item No.	De	escription	UOM	Extended Price
1	Equipment as specified in Attachi Drawings *	ment B Detailed Specifications and	LS	\$
2	Misc. Wire, Cables, Plates/Panels	s & Connectors	LS	\$
3	Integration		LS	\$
4	Installation		LS	\$
5	Bonds		LS	\$
6	Training		LS	\$
7	Freight		LS	\$
(manufact  If bidding every insta Products that a condiscretion  Estimate	urer/model/quantity/unit cost/exter or proposing commodities other ance give all information required will only be considered if proof of	than those specified as basis of of in Section 2.0 (B) of the Notice and formula to the comparability is provided to DASNY qual" will be determined by DASNY be final.	design, t nd Inforr ' in writir	the bidder must in mation for Bidders. ng. A determination
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# BIDDING REQUIREMENTS for PURCHASING

# NOTICE AND INFORMATION FOR BIDDERS

1. Does your firm anticipate the use of subcontractors and outside suppliers specific to this procurement Yes  No  Does your firm anticipate the creation of employment opportunities arising from this procurement? Yes  No  Motor Not  Not  Not  Not  Not  Not  Not	(The below questions 1) and 2) need only be answered it the a	bove total bid is for one million dollars or more)
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:  BIDDER (FIRM NAME)  ADDRESS OF FACTORY OR PLANT WHERE ITEMS ARE MANUFACTURED AND/OR ASSEMBLED. (Attach additional sheet(s) if more than one manufacturer)  NAME (TYPE/PRINTED)  TITLE	<ol> <li>Does your firm anticipate the use of subcontractors at</li> </ol>	nd outside suppliers specific to 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:  BIDDER (FIRM NAME)  ADDRESS OF FACTORY OR PLANT WHERE ITEMS ARE MANUFACTURED AND/OR ASSEMBLED. (Attach additional sheet(s) if more than one manufacturer)  NAME (TYPE/PRINTED)  TITLE	Yes No	
Completed for all bids.   Identify all subcontractors, if any:	<ol><li>Does your firm anticipate the creation of employment</li></ol>	ent opportunities arising from this procurement?
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# BIDDING REQUIREMENTS for PURCHASING

# NOTICE AND INFORMATION FOR BIDDERS

Attachment B: Detailed Specifications/Drawings and Scope of Work

#### PART 1 - GENERAL

#### 1.1 SUMMARY

#### A. PROJECT OVERVIEW

1. This specification covers the Audiovisual Systems to be installed during Phase 2 of the Field Building Renovation project for Baruch College.

# B. Room Name/Types:

Room Type	Room Numbers
Multipurpose Room	100
Mason Hall Lobby	1L04

## C. Related Requirements

- 1. Related Work Specified Elsewhere
  - a. Certain equipment and materials are provided and installed by others. The Contractor thoroughly understands each project's related requirements. Unless otherwise indicated in these specifications, or on the related AV drawings, these will include the following:
    - 1) All conduits, wireways, connection boxes, pull boxes, junction boxes, and outlet boxes permanently installed in walls, floors, and ceilings, except as shown on the AV drawings.
    - 2) Installation of all floor boxes and/or poke thru devices, excluding any plates and connectors to be provided by the contractor.
    - 3) Fiber optic trunk cabling, including terminations and patch panels.
    - 4) Telephone and telecommunications jacks and special telecom outlets not related to AV.
    - 5) All room lighting fixtures, dimmers, power receptacle outlets, and interconnecting wiring for these circuits.
    - 6) All electrical breaker panels required to power the audiovisual and television equipment.
    - All structural work, wall openings, platforms, railings, stairs, fire prevention and safety devices, rough and, drapes, carpets, floor coverings, computer floors, glazing, acoustical treatments, and heating, ventilating, and air conditioning systems, except as shown on the AV Contract drawings. Note All finished trim, painting and patching necessitated as part of the AV systems installation is a part of the Contractor scope of work.
    - 8) Moveable furniture, desks, and chairs.

9) Though not under the scope of this document, the Contractor coordinates these and any other related items required to provide and integrate a fully functional AV system as described in this specification.

#### DASNY furnished data network

- a. Unless specified otherwise, network switches are provided by **DASNY**.
- b. The Contractor establishes demarcations, such as bulkheads at the back of racks, to clearly delineate the demark between Contractor scope and City of New York network.
- c. The Contractor works with CONSULTANT and **DASNY** to determine the schedule to make sure the data network is useable so that the AV Systems can be deployed and tested in a timely fashion.
- d. The Contractor co-ordinate with **DASNY** and obtains details of the data network and verifies sufficient network connectivity (both passive "infrastructure" and active switch ports with adequate bandwidth etc.) is be provided for the AV Systems to operate correctly.
- e. The Contractor co-ordinates with **DASNY** to verify compatibility/inter-operability between that City of New York's data network and the audiovisual systems and identifies in writing any potential deficiencies or areas of concern, prior to commencing on-site installation.
- f. The Contractor coordinates AV/IT Requirements Worksheet, bulkheads and similar physical points of demarcation been Contractor supplied and data services provided by others.

#### 1.2 PRICE AND PAYMENT PROCEDURES

A. Unit Prices – Refer to Equipment List

#### B. Alternates

- 1. Submit bid based on the provided equipment list
- 2. The Bidder may propose alternate equipment; however, all such proposals are submitted separately and identified as "alternates" with equipment costs shown separate and apart from the costs of the equipment "as specified".
- 3. Proposals for alternate equipment will receive careful and equitable consideration if the differences do not depart from the overall intent of the design and operation of the system, are in the best interests of **DASNY**, and are equal in durability and usability.
- 4. All proposals for alternate equipment is accompanied by full technical information, "cuts" and specifications for the equipment so proposed. The Bidder identifies the substantive differences between the alternate and the specified equipment. Any proposed alternate equipment must have a manufacturer's warranty that matches or exceeds the warranty requirements identified in the Contractor's Guaranty Obligation.
- C. Exceptions and Proposed Modifications

- 1. All deviations from specifications provided are tracked on a Deviation Tracking form. If a particular piece of kit is unavailable, the Contractor fills out the form and sends to CONSULTANT for approval.
- 2. Proposals for any alternate equipment/solutions are submitted formally with technical information, systems drawings and applicable "cut-sheets" for the equipment or solution so proposed. The Contractor identifies all substantive differences between the "alternate" and "specified" equipment.
- 3. The Contractor obtains products, configures and demonstrates for consideration into the standards, and host demonstrations in their shop as applicable at the request of CONSULTANT.
- 4. Any and all exceptions to these specifications, related drawings, general conditions and terms & conditions must be made with the proposal submission. In the absence of exceptions, this RFP and related drawings are binding in letter and intent upon the successful Contractor. It is required that the Contractor has, to the best extend possible, reviewed and accepted project site conditions in advance of commencing project work.
- 5. The Bidder examines the design and specifications in detail and is prepared to take full responsibility for the performance of the complete installation as designed and specified. Any exceptions to these specifications and related AV Contract drawings must be made with the bid submission. In the absence of exceptions, these specifications and related drawings are binding in letter and intent on the successful Bidder.

#### 1.3 REFERENCES

# A. Abbreviations and Acronyms

- 1. NIC Work which is not covered in the scope of this audiovisual systems contract.
- 2. OFE Equipment provided by Dormitory Authority of the State of New York (DASNY).
- 3. OFEOI Equipment provided by **DASNY**, **DASNY** Installed.
- 4. Contractor Audiovisual/Low Voltage Integrator subcontracted by **DANSY**.
- 5. IDF and MDF closets An intermediate distribution frame (IDF) is the distribution frame in **DASNY**'s premises which cross-connects the user cable media to individual user line circuits and may serve as a distribution point for multipair cables from the main distribution frame (MDF).

#### B. Reference Standards

- 1. Section 26 05 00 Common Work Results for Electrical
- 2. Section 27 05 26 Grounding and Bonding for Communications Systems
- 3. Section 27 21 00 Data Communications
- 4. Section 27 21 12 Data Communications Network Security Appliances
- 5. Section 27 21 26 Data Communications Network Management
- 6. Section 27 21 29 Data Communications Switches
- 7. ANSI/INFOCOMM 10:2013 AV Systems Performance Verification

### 1.4 ADMINISTRATIVE REQUIREMENTS

#### A. Coordination

- 1. Contract administration is by the Commissioner.
- 2. Coordinate with the project team on items including but not limited to building access, loading dock, site surveys, connecting into existing lighting and shade control, local IP network (LAN), cable paths and distance limitations.

# B. Schedule of Implementation

- 1. Verify the project schedule and confirm via bid return compliance with the project schedule for delivery of a complete audiovisual system within the specified time frame.
- 2. Indicate acceptance of the project schedule by submitting a scheduling plan with the quote for each project indicating the various pertinent milestone dates for each project assigned for completion of design, pre-installation work, on-site installation work, and testing and acceptance on a 'per phase' basis.
- 3. At a minimum, the schedule should include the following information:
  - a. Number of days required for submission of engineering documents from receipt of notice to proceed.
  - b. Days to complete the AV Contract scope from receipt of approved documents. This information should be broken down to indicate benchmark dates of other trades and days to completion of tasks associated with those benchmarks.
  - Issued and updates communicated to reflect any change as the work progresses:
     Staging date, Installation completion date, Acceptance of System, Delivery of As-Built documentation.

# PART 2 - PRODUCTS

# 2.1 AV CONTRACT DRAWINGS

#### A. QUALITY OF MATERIALS AND EQUIPMENT

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

DBB JOB NO.: 21922.00 BARUCH FIELD BUILDING PHASE 2

#### 2.2 DETAILED SPECIFICATIONS

#### A. MULTI-PURPOSE ROOM

The Multi-Purpose Room is located on the first floor near the Mason Hall Auditorium. The room will be used mainly as a Lounge area for students but will also be able to accommodate Presentation events. There will be a large projection screen with a ceiling mounted laser-based projector at the east wall. Two large 98" flat panel displays will be mounted along the south wall. The flat panel displays can be used as independent huddle meeting/presentation areas or as supplemental displays along with the projection screen for a larger event. Wired and wireless connections for Laptop PCs, a desktop PC, and other BYOD devices will be available to each display.

There will be a Lectern for the Presenter near the projection screen.

PC based conferencing will be used for the Multi-Purpose Room. For small huddle type conferencing there will be an Auto Tracking PTZ camera mounted above each flat panel display. For larger presentations with conferencing using the projection screen, there will be two other Auto tracking PTZ cameras mounted on the north wall. These cameras, along with the other cameras above the displays, will be used with the conferencing system. Wireless microphone systems and ceiling array tracking microphones will support the voice reinforcement for the conferencing systems and the room.

For AV system control there will be touch panels located on the wall at the Presenter location near the Projection Screen and near each flat panel display. The rack for the AV equipment will be housed inside a storage closet.

#### 2.3 SYSTEM INTERCONNECTION & FUNCTIONAL DESCRIPTION

- A. The functional interconnections of the audio, video and control systems are as detailed on the AV Systems drawings (TA-6.\*\* series drawings).
- B. The Contractor will provide all interconnection cable, connectors, terminal strips, wireways, flexible conduit, etc., to facilitate the audiovisual systems as detailed within these specifications and AV Contract drawings.
  - 1. The conduit and power systems are detailed in the Electrical drawings.

#### C. Display and Video

1. Provide and integrate projectors, displays, switching, video distribution equipment, interfaces and cabling as detailed on the AV Contract drawings and as described in this specification.

- 2. Multi Purpose Room #100
  - a. Displays
    - Provide and install a 7000 lumen, laser-based, 4K UHD data video projectors, complete with zoom lens, and all necessary ceiling mounting hardware for display of high definition and standard definition video and PC images.

Basis-of-Design Product: Subject to compliance with requirements, provide a Video Projector from NEC or comparable product by one of the following:

- a) Panasonic
- b) Digital Projection
- c) Or approved equal

Basis-of-Design Product: Subject to compliance with requirements, provide a Video Projector Ceiling Mount from Chief or comparable product by one of the following:

- a) Peerless
- b) Premier Mounts
- c) Or approved equal
- 2) Motorized 116"Wx65"H (133" diagonal) projection screens will be provided and installed by the General Contractor.
- 3) Provide two (2) 98" flat panel monitors and wall mount for display of high definition and standard definition video images. The monitors will be mounted up in the ceiling soffit and used as confidence monitors for the Presenter.

Basis-of-Design Product: Subject to compliance with requirements, provide 98" Flat Panel Monitors from NEC or comparable product by one of the following:

- a) Samsung
- b) LG
- c) Or approved equal

Basis-of-Design Product: Subject to compliance with requirements, provide wall mounts for the 98" Flat Panel Monitors from Chief or comparable product by one of the following:

- a) Peerless
- b) Premier Mounts
- c) Or approved equal
- b. Video source devices
  - 1) Laptop PC (OFE) images from the Lectern via portable HDBaseT transmitter.

- 2) Laptop PC (OFE) images from the HDMI input plates near the flat panel displays.
- 3) Desktop PC (OFE) with an HDMI output images. The Desktop PC is to be used for room conferencing (Zoom, MS Teams, Goto Meeting, Google Meet, etc.)
- 4) Wireless Video Gateway interfaces to connect laptop PCs, tablets, smart phones and other devices via wireless to each flat panel display and the projector.

Basis-of-Design Product: Subject to compliance with requirements, provide a Wireless Video Gateway interface from Mersive or comparable product by one of the following:

- a) Crestron
- b) Extron
- c) Or approved equal
- 5) AV to USB Production System Bridge Encoder for integrating the audiovisual system with the software based conferencing applications on the Desktop PC.

Basis-of-Design Product: Subject to compliance with requirements, provide an AV to USB Production System Bridge Encoder from Vaddio or comparable product by one of the following:

- a) Extron
- b) Kramer
- c) Or approved equal
- 6) Four (4) High Definition Pan/Tilt/Zoom USB cameras for use with the conferencing system. Two cameras will be mounted above the flat panel displays on the south wall, the other two cameras will be mounted on the columns on the north wall.

Basis-of-Design Product: Subject to compliance with requirements, provide HD PTZ Cameras from 1Beyond or comparable product by one of the following:

- a) Vaddio
- b) AVER
- c) Or approved equal
- c. HDBaseT Digital Video Matrix Switching/Routing System
  - HDBaseT based digital video matrix switching/routing system, complete with mainframe and all necessary twisted pair and HDMI input/output cards to be provided by DASNY. Contractor to install and integrate all required transmitter/receiver devices (at the displays, floorboxes,

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equipment rack locations, etc.) to operate in tandem with the HDBaseT based switcher/router.

- a) Sole Source Manufacturer: Crestron
  - i. No Substitutions Permitted

#### D. Audio

1. Provide and integrate speakers, amplifiers, hard-wired and wireless microphones, audio digital signal processing, and cabling as described in this specification.

Basis-of-Design Product: Subject to compliance with requirements, provide an Audio DSP from Biamp or comparable product by one of the following:

- a. Symetrix
- b. BSS
- c. Or approved equal
- 2. Assistive Listening System
  - Infrared-Based Assistive Listening System, complete with IR emitters, modulators, IR receivers and charging stations to be provided by DASNY. Contractor to install Assistive Listening System.
  - b. Sole Source Manufacturer: Listen Technologies
    - 1) No Substitutions Permitted
- 3. Provide and install ceiling mounted speaker assemblies for playback of program and conferencing audio.

Basis-of-Design Product: Subject to compliance with requirements, provide ceiling mount speakers assemblies from JBL or comparable product by one of the following:

- a. Tannoy
- b. Biamp
- c. Or approved equal
- 4. Ceiling Mounted Tracking Microphones
  - a. Ceiling mounted tracking microphones for audio pickup of the audience in the middle of the room to be provided by DASNY.
    - 1) Sole Source Manufacturer: Shure
      - a) No Substitutions Permitted
- 5. Provide a wireless microphone system, complete with wireless handheld and lavalier transmitters and receivers, directional antenna and antenna distribution system for use with the voice reinforcement and conferencing systems.

Basis-of-Design Product: Subject to compliance with requirements, provide a wireless microphone system from Shure or comparable product by one of the following:

- a. Sennheiser
- b. AKG

# c. Or approved equal

#### E. Control

## 1. Touch Panels and Control System Mainframe

- a. Control System Mainframe with an integrated network-based master controller that provides ports for IR/serial, RS-232/422/485, Ethernet, relay closures and input and output control card frames and rack mounted to be provided by DASNY. Master controller to be part of All-In-One Presentation Switcher.
- b. Wall Mounted Touch Panels for AV System Control to be provided by DASNY.
  - Control System Mainframe and Touch Panel Sole Source Manufacturer: Crestron
    - a) No Substitutions Permitted
- 2. Provide control of all equipment as indicated within this specification and as indicated on AV Contract drawings.
- 3. Provide all loose cables, connectors, etc. required to complete a full working system.
- 4. Coordinate with **DASNY** and provide system interface to the local IP network (LAN). Provide interfacing of multiple control systems components over IP, for the application of future interface to any City of New York-furnished AV-system monitoring systems.
- 5. When a choice of control protocols is available for a piece of equipment, the most secure and flexible one is used; i.e. RS-232 control, where available, is used in place of either infrared or relay control.
- 6. Where the power state of a piece of equipment is indeterminate, power sensors are provided to indicate the devices power state to prevent misalignment of system and equipment power cycles.
- 7. Where two or more panels are controlling the same device, each panel is to reflect the devices current status.
- 8. Provide electrical on/off power
- 9. Control System Functionality
  - Provide audiovisual system control from the wall mounted color LCD touch panels located near each flat panel displays. These touch panels will be used for small local presentations using the flat panel display. Provide basic user-level audiovisual system control, including source selection, program audio volume, mic volume, mic mute. camera preset recall.
    - Establish control system functionality from the touch panel near the Presenter Position for the following devices and capabilities:
    - 1) Video Projector
    - 2) Projection Screen
    - 3) Flat Panel Displays (for supplemental viewing)
    - 4) Audiovisual Source Selection
    - 5) PTZ cameras
    - 6) Program Volume Control
    - 7) Speech Volume Control

- 8) Far End Volume Control
- 9) Light Dimming System Presets
- 10) Motorized Solar Shade System
- 11) Motorized Blackout Shade System
- b. Provide audiovisual system control from the DASNY provided wall mounted color LCD touch panels located near each flat panel displays. These touch panels will be used for small local presentations using the flat panel display. Provide basic userlevel audiovisual system control, including source selection, program audio volume, mic volume, mic mute. camera preset recall.

Establish control system functionality for the following devices and capabilities:

- 1) Flat Panel Display
- 2) Audiovisual Source Selection
- 3) PTZ cameras (above display and opposite wall)
- 4) Program Volume Control
- 5) Speech Volume Control
- 6) Far End Volume Control

#### F. Software

- 1. 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.
- 2. Provide password protection for any operations that can adversely affect certain room set-up functions. Provide for the ability for remote monitoring of system functions and adjustments via TCP/IP. Capability for configuration will require password protection for use of facility management. Provide for the delivery of email fault alerts to facility management.
- 3. Final Software is provided to **DASNY** with the As Built Drawings. If the vendor is chosen to provide a maintenance contract, they are obligated to maintain the latest copy and provide a copy to **DASNY** at the termination of the maintenance contract per room.
- 4. Control Software will have a 60 day "burn-in" period for bug fix troubleshooting after the date of beneficial first use. This may include at least two full revisions of the software to achieve the required operation.

#### G. Miscellaneous

 Provide and install all hardware, cabling, connectors, faceplates, terminators, adapters, audio combiners, balanced-unbalanced audio converters, wall boxes, etc. required to ensure installation of a fully functional audiovisual system as depicted in the attached AV Systems drawings.

### 2.4 EQUIPMENT LAYOUT

- A. Provide the equipment layout as indicated on the AV Contract drawings. Provide audiovisual equipment racks with blank and vent panels as indicated on the AV Contract drawings. There are not to be any open areas on the front of the racks.
- B. All equipment is installed with rack ears/mounts or custom rackmounts/face-plates, using security screws. There will not be any shelf-mounted components in the audiovisual racks.
- C. Convection airflow is to be considered when placing equipment and venting

#### 2.5 CITY OF NEW YORK FURNISHED EQUIPMENT

- A. All room furniture will be furnished by **DASNY** (Unless otherwise noted in this specification).
- B. All laptop and desktop PCs will be furnished by **DASNY**.

#### 2.6 RELATED WORK SPECIFIED ELSEWHERE

- A. The following systems and equipment are not provided under this contract. The Contractor is to coordinate with the base bid contractors as necessary to insure compatibility.
  - 1. Installation of all furniture stub-ups, floor boxes and/or poke thru devices (excluding any plates and connectors to be provided by the General Contractor.
  - 2. Telephone and telecommunications jacks and special telecom outlets not related directly to AV, (LAN/WAN, ISDN, POTS, etc.).

# 2.7 AUDIOVISUAL EQUIPMENT SCHEDULE

A. See the attached, detailed equipment lists for the audiovisual systems. These lists are provided for the purpose of soliciting bids. The bidders are responsible for supplying all equipment necessary to provide complete and working systems, whether or not the equipment is specifically enumerated herein.

# **PART 3 - EXECUTION**

# 3.1 CONTRACTOR'S GENERAL RESPONSIBILITIES

A. The Contractor is responsible for delivering a complete, fully operational turnkey system to **DASNY** 

- B. The Contractor will furnish all equipment and materials, whether specifically mentioned herein or not, to ensure a complete and operating system. The NIC and OFE equipment and materials are exempted from this requirement.
- C. The Contractor will generate all shop drawings and information for the complete installation and wiring of the system. The Contractor will provide the on-site installation and will provide on-going supervision and coordination during the implementation phase.
- D. The Contractor is responsible for the adjustment of the systems as herein prescribed and will provide all test equipment for the system checkout and commissioning.
- E. The Contractor will coordinate and submit to all site policies and adhere to all site safety procedures put in place by **DASNY**, project team and General Contractor. If safety or policy meetings are specific to AV Systems, the Contractor will provide and issue minutes/record of meeting.
- F. The Contractor will attend all project and coordination meetings as required by CONSULTANT.
- G. The Contractor is to perform an RF Spectrum Analysis Survey identifying all available frequencies that may be required by any wireless equipment under this specification such that appropriate frequency allocations may be identified for the purpose of purchasing corresponding transmitters and receivers. The Contractor is responsible for the validity of the survey and any subsequent equipment substitution that may result even if such equipment has been previously accepted by submittal.

# 3.2 PROJECT IMPLEMENTATION PROCESS

# A. Construction Administration

- CONSULTANT schedules and hosts a kickoff meeting with **DASNY**'s project team and the
  designated Contractor to review the scope, answer engineering and design questions,
  finalize the project schedule, and set expectations for the successful completion of the
  work by the Contractor.
- 2. CONSULTANT reviews and approves shop drawings and submittals and respond to Contractor's RFIs. The Contractor will be directed by CONSULTANT to respond to RFIs, review and comment on product specifications and literature pertaining submitted by the general contractor/construction manager or subcontractor (as applicable).
- 3. The Contractor performs site inspections and supervision, examine installer's quality of work, and ensure adherence to the designs and requirements for the project(s)n, and issues status reports at a frequency established by the project team. The Consultant will verify these tasks are being performed as expected.
- 4. CONSULTANT will coordinate with the Contractor project manager on system checkouts and perform final inspections of the facility and the systems. The Contractor will establish a punch list and manage the completion all items related to AV system

installation and communicate back to CONSULTANT and the project team all non-AV system related items.

## B. Project Management

- 1. The Contractor is to provide a consistent implementation process to ensure continuity and quality across all projects.
- 2. The Contractor will perform project manage responsibilities and coordinate the installation of the AV systems under the direction of CONSULTANT.
- 3. The Contractor will ensure that the systems are delivered on-time and on-budget and that they meet all performance requirements and comply with the design specifications.
- 4. The Contractor will be responsive to all queries from the project team, the Commissioner (where applicable), the general contractor/construction manager, engineers, and other trade consultants regarding the project design contract drawings, submittals and construction progress.
- 5. The Contractor will provide project meeting and site attendance, and proactively participate in day to day activities as it relates to the on-going deployment of the project. The Contractor will provide a skilled representative to be either on-site daily or as frequently as required to meet project deliverables and deadlines.

## C. Closeout

- 1. The Contractor will issue to CONSULTANT for approval a closeout package of all relevant project information to facilitate the transition of the audiovisual system to operational and support staff, which will include associated warrantees, equipment maintenance agreements and third-party support agreements.
- 2. All equipment and software purchased as part of this specification is owned by **DASNY**.
- 3. The Contractor is to provide a seamless transfer of ownership to **DASNY's** designated AV support vendor, inclusive of all as-built documentation and product warrantees.

### D. Project Manager's Duties and Responsibilities:

- 1. The Contractor will provide a Project Manager to oversee and coordinate all activities on the Project
- 2. The Project Manager is to maintain the ability of making all managerial decisions on behalf of the Contractor on a day-to-day basis, and is to retain the authority of accepting notices of deduction, inspection reports, payment schedules and any other project related correspondence on behalf of CONSULTANT.
- 3. The Project Manager will attend project meetings as required, during which time all System related issues are discussed, scheduled, confirmed, and/or resolved.
- 4. The Project Manager is available during normal business hours (8:00 am to 5:00 pm) by telephone during the term of the project.
  - a. After normal business hours, the Project Manager is available within four (4) hours (5:00 pm to 9:00 pm) by email during the term of the project for urgent matters.

- b. In the event that the Project Manager is not available within the allotted time frame, the Contractor may designate additional staff to temporarily act as the Project Manager for all correspondence with CONSULTANT and **DASNY**.
- c. The Contractor will ensure that any individual temporarily assuming the duties of the Project Manager is at equal or higher level in the Contractor's managerial chain of command.
- 5. Upon notification by CONSULTANT of any AV Contract scope related installation issue, or issue that may contradict the Specifications as stated herein, the Project Manager will respond to such issue, verbally and/or in writing within an eight (8) hour period.
  - a. Responses to such issues as stated above must include a clear understanding of the issue, along with a tentative plan of action, reflecting milestones and/or deadlines to resolve the issue.
  - b. Where appropriate, based on the overall importance of the AV Contract scope issue, the Project Manager will follow-up their initial response with a written response to the issue within 24 hours of identification of the issue.

#### 3.3 PROJECT SCHEDULE

- A. Prior to the initiation of the Work, the Project Manager is to submit an updated schedule reflecting key milestones of the Work, including but not limited to the following:
  - 1. Kick-off meeting
  - 2. Preliminary pricing estimate
  - 3. Program Report (as applicable)
  - 4. Shop drawing submittal (architectural and system)
  - 5. AV/IP worksheet
  - 6. Prefabrication submittal
  - 7. Staging of major systems
  - 8. Ordering, delivery, and installation of System equipment
  - 9. Field equipment delivery
  - 10. Room Ready
  - 11. Payment schedule
  - 12. Installation completion date
  - 13. System Instruction (as applicable)
  - 14. Commissioning
  - 15. Acceptance of System
  - 16. Delivery of As-Built documentation
  - 17. Delivery of Operations & Maintenance Manuals
  - 18. Go-Live date
- B. The project schedule must be consistent with the schedule submitted with the bid, as well as the overall project schedule as developed by the GC and as provided and distributed during the bid period.

- C. The Project Manager is to update the schedule on a weekly basis to reflect the status of each key milestone as the Work progresses.
- D. As the System installation progresses, the Project Manager is capable of discussing any/or all of the above-mentioned items at the request of CONSULTANT, and will address each item, as it relates to the current status of the Work.
- E. If for any reason, the Contractor becomes unable to meet the milestones outlined in their project schedule, the project manager will notify the CONSULTANT, design team, and trades associated with related work, so as minimize delays in other project work paths, and will present a plan for restoring the project back to schedule.

#### 3.4 APPLICABLE CODES, STANDARDS, PERMITS AND INSPECTIONS

- A. All audiovisual work must meet or exceed the latest requirements of all National, State, City, County, Municipal and other Authorities having Jurisdiction over the audiovisual work and the project. It is the responsibility of the Contractor to obtain copies of all applicable codes.
- B. Any portion of the audiovisual work not subject to the requirements of an electrical code is governed by the National Electrical Code and any and all applicable sections of the National Fire code, as published by the National Fire Protection Association.
- C. Installation procedures, methods and conditions must comply with the latest requirements of the Federal Occupational Safety and Health Administration (OSHA), the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA).
- D. The Contractor is responsible for all costs incurred to meet these codes and conditions.
- E. Codes and requirements pertaining to the work:
  - 1. NFPA-72 National Fire Alarm and Signaling Code
  - 2. International and National Electric Codes (IEC/ NEC)
  - 3. IEC 60268-16 Third Edition 2003-05 Objective rating of speech intelligibility
  - 4. ANSI/Infocomm
    - a. 10:2013 Audiovisual Systems Performance Verification
    - b. 1M:2009 Audio Coverage Uniformity Standard in Enclosed Listener Areas
    - c. 2M:2010 Standard Guide for Audiovisual Systems Design and Coordination
    - d. 3M:2011 Projected Image System Contrast Ratio
  - 5. Sustainable Technology Environments Program
  - 6. Underwriters Laboratories, Inc. (UL)
  - 7. Building Industry Consulting Service International (BICSI) Telecommunications
    Distribution Methods Manual latest edition.
  - 8. ANSI/TIA/EIA-568-B Commercial Building Telecommunications Cabling Standard

- 9. ANSI/TIA/EIA-569 Commercial Building Standards for Telecommunications Pathways and Spaces
- 10. ANSI/TIA/EIA-606-A. Administration Standard for Commercial Telecommunications Infrastructure
- 11. TIA-607-A, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
- 12. EIA RS-232 Serial Communications Electrical Interface
- 13. EIA RS-310-C Racks, Panels and Associated Equipment
- 14. FCC Part 15
- 15. FCC Part 68
- 16. IEEE 802.3
- 17. IEEE 802.5
- 18. NEC Article 770 Optical Fiber Cables
- 19. NEC Article 800 Communications Circuits
- 20. NFPA 70 National Electrical Code
- 21. NFPA 75 Protection of Electronic Computer / Data Processing Equipment
- 22. United States Green Building Council (USGBC): Leadership in Energy & Environmental Design (LEED®): Green Building Rating System for New Construction & Major Renovations (NC) Version 3.0 (2009) www.usgbc.org.

#### 3.5 STATUS REPORTS

- A. After the award of contract, the Contractor is responsible for providing weekly status reports outlining his progress on the AV Contract scope. These reports should include information on the work completed during the week, the work to be completed during the upcoming week and any potential scheduling issues.
- B. The following items are included in the Status Report:
  - 1. Expected date of AV submittals, including equipment cut sheets, shop drawings, control system interface designs, etc. (see schedule above)
  - 2. Anticipated completion date and percentage complete of control system programming for staging and on-site installation.
  - 3. Anticipated completion date and percentage complete of in-house rack fabrication, testing and staging prior to shipping to the job-site. (refer to schedule above)
  - 4. Field Reports prior to infrastructure completion: verify conduit sizing, nylon bushings back boxes at proper height, possible conflicts with HVAC ducting, wall reinforcement, cable pulls proceeding, electrical contractor following best practice for bend radius, etc.
  - 5. Schedule and percentage complete of on-site wiring and supervision.
  - 6. Schedule and adherence to room-ready milestones:
    - a. Monitor room-ready dates tracked in GC schedule, provide notification of any anticipated slippage, modify AV schedule accordingly.
    - AV Room Ready Definition: wall painted, lighting installed and functioning, AV interfaces for shade installed and functioning, HVCA systems installed and balanced, ceiling grid and tiles completed, furniture installed, electrical system

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installed, IT system installed and functioning, carpet installed, doors in place with locks or security on site.

- 7. Schedule and percentage complete of on-site installation.
  - a. Field reports on installation in progress: verify non-installed equipment is secure, installed equipment is protected if exposed to construction work, installation is proceeding and following best practice, that there are no network or GC dependencies.
- 8. Schedule **instruction for DASNY** (as applicable)
- 9. Schedule and percentage complete for systems checkout and turnover to **DASNY**.

#### 3.6 CONTRACTOR'S DOCUMENTATION

#### A. Pre-Construction Submittals

- 1. At the beginning of each project, the Contractor will prepare a submission for approval to CONSULTANT a shop drawing package that applies the standards to the project's custom spaces.
- 2. The submission is to show evidence that a cross functional design review has been performed, including calculations to conform the performance of the system that will be installed
- 3. The Contractor must also submit, for approval, any custom designs pertaining to the systems.
- 4. Approval of shop drawings does not relieve the Contractor of meeting the specifications in product, performance, and practices. The submission will include the equipment list and all calculations verifying the predicted performance, including but not limited to ceiling speaker and ceiling microphones coverage, camera angles and sight lines, and display viewing distances, custom mounting, power and ventilation coordination.
- 5. The Contractor is to provide one (1) sets of all documentation. Drawing submittals to be delivered electronically in PDF and working format (such as AutoCAD) to CONSULTANT, and at their option to the Commissioner and **DASNY**. These designs include, but are not limited to, the following:
  - a. A complete set of engineering drawings, prepared in CAD, including but not limited to AV flow with EDID Plan, control flow, , rack elevations, wiring details, conduit details, I/O and user interface plates, and reflected ceiling plans, AV layouts, and elevations as required to clearly show the system in an unambiguous manner such that it may be reviewed, fabricated, installed, and calibrated.
  - b. System construction and point to point wiring schematic drawings are to include all component values and showing complete letter and number identification of all wire and cable as well as jacks, terminals and connectors. All connections are to be shown; details with "typical" connection diagrams are not acceptable.
  - c. Provide bound (.pdf) technical specification details (cut sheets) on all equipment required to complete the AV Contract scope with a table of contents and page number reference.

- d. All control system front panel layouts, where applicable.
- e. All panels, plates, and designation strips, including details relating terminology, engraving finish and color.
- f. All custom designed consoles, tables, carts, support bases, and shelves.
- g. Schematic drawings of all custom components, assemblies and circuitry, including wall and/or floor plates.
- h. All unusual equipment modifications.
- i. Run sheets or field wiring details.
- j. Patch panel assignment layout drawings.
- k. Elevation Drawings of each equipment rack, both front and rear.
- Where applicable, suspension arrangement for the loudspeaker clusters. This
  drawing must indicate hanging details and orientation of loudspeakers as
  required for proper coverage as specified. When deemed necessary, shop
  drawings is sealed by a Structural Engineer licensed in DASNY.
- m. Verification of the focal lengths of projection lenses and cameras to achieve the specified image sizes.
- n. Staging and final acceptance testing checklists that will be used on the project. These checklists are in Microsoft Excel Workbook tailored to the project and test reports modified to be applicable for each system type. AVIXA/Infocomm/AQAV is used as reference standard for staging and commissioning checklists.
- o. Testing procedures are to include (at a minimum) passing criteria and checklists for all systems included in this specification. testing methods, materials, equipment, and documentation of results to be provided. Note: Submittals not providing testing procedures will be rejected.
- p. The AVI will provide a list of the calibrated equipment that will be used on the performance tests in the Staging and Commissioning Checklists, along with the calibration date and serial numbers for each.
- q. All items of equipment, whether a stock manufactured item or custom-built item, is supported by complete and detailed schematic drawings and replacement parts lists. No "black boxes" or unidentified components is acceptable under this specification.

#### B. Close Out Submittals

- 1. At the completion of the installation, the Contractor will provide one (1) copies each in both Physical an Electronic (PDF) form of the following:
  - a. Test results, in "spreadsheet" format, of electrical audio and/or video performance testing for all systems end-to-end in every room and/or between rooms as applicable.
  - b. Note: It is the sole responsibility of the Contractor to fully test the audiovisual systems prior to CONSULTANT check-out and verification. Until these test results are provided, no audiovisual systems check-out or verifications (functional or otherwise) will be performed by the CONSULTANT. If any anomalies in system performance are detected, the Contractor must correct these before performing any other tests.

- c. Results of RF Spectrum analysis as used to establish available frequencies for wireless devices included in this contract.
- d. Equipment manufacturer's operation manuals for each piece of equipment.
- e. "As-built" drawings for every item indicated in the "Detailed Specification" sections of this specification as installed. Contractor is to coordinate the preferred format (hard copy or digital) and location of these documents with CONSULTANT and **DASNY** upon completion.
- f. Any exceptions to the standardized system specifications and functional block drawings requires the issuance of unique "As-built drawings for the complete system.
- g. System functional block drawings showing all input and output circuit cable and terminal block numbers as well as all jack field circuit I.D. designations. A copy of these drawings are framed in protective plastic and mounted behind the display or inside the equipment racks 24 hours prior to first use by **DASNY**, or as otherwise directed by the CONSULTANT.
- h. A Systems Operation and Maintenance Manual. This manual is produced by the Contractor especially for all non-standard systems. The "Operation" section is to describe all typical procedures necessary to activate each system to provide for the functional requirements as listed under the Detailed Specifications. Manuals will use graphical representation of touch panel screens, as to easily be identified by user. Owner's Manuals and/or Operations manuals supplied by manufacturers for a given piece of equipment, though required, are not acceptable substitutes for these materials.
- i. A laminated, quick-reference card outlining Audiovisual Systems start-up and operation is provided for all non-standard rooms.
- j. The reader of this manual is assumed to be technically competent, but unfamiliar with this particular facility. Additionally, the Contractor will provide a single page of basic operating instructions for each room, and other audio-visually equipped spaces.
- k. The "Maintenance" section is to provide a recommended maintenance schedule with reference to the applicable pages in the manufacturer's maintenance manuals. Where inadequate information is provided by the manufacturer, the Contractor is to provide the information necessary for proper maintenance.
- I. In addition to the Operation and Maintenance Manual(s), the Contractor is to provide a simplified user's guide ("cheat sheet") for each audiovisual system.

# 2. Distribution

- a. All documentation is electronic.
- b. The Contractor will follow all procedures regarding posting of documents and comply in a timely manner to any discrepancies.
- c. One hard copy is delivered to the CONSULTANT prior to the System Commissioning.
- 3. One copy of the above documentation will be retained by the Contractor.
- 4. Procedure for Resubmitting

- a. Make corrections or changes in O & M and/or Record Drawings as required by the Commissioner and resubmit when the Commissioner's stamp requires resubmittal.
- b. Clearly identify changes made other than those specifically requested by the Commissioner when resubmitting Record Drawings. Changes are clouded or similarly highlighted as coordinated with the Commissioner. Only changes that have been specifically requested by the Commissioner or have been clouded by the Contractor will be reviewed on resubmittals.
- Any drawing sheets added to the resubmittal are clearly identified and clouded and will not change the sheet numbering scheme for previously issued Record Drawings.
- d. The Contractor is responsible for any delays caused by the re-submittal process.

#### 3.7 EQUIPMENT DELIVERY AND STORAGE

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

# 3.8 CLEANUP AND REPAIR

A. Upon completion of work each day the Contractor is to remove all his refuse and rubbish from and about the premises and is to leave the relevant areas and equipment clean and in an operational state. The Contractor is responsible for repairing any damage caused to the premises by the Contractor's installation activities, at no cost to CONSULTANT or **DASNY**. All repairs are to be completed by the General Contractor and billed to the Contractor.

#### 3.9 TRAINING FOR DASNY

- A. The Contractor is to quote to provide on-the-job instruction that **DASNY** may choose to include or decline.
- B. All Instruction is conducted by a suitably qualified instructor, to personnel designated by DASNY, to instruct them in the operation and maintenance of the systems. In the event the Contractor does not have qualified instructors on staff for certain sophisticated equipment, the Contractor will provide a manufacturer's representative for such instruction to DASNY at no additional cost. All Instruction is to take place after the systems are operational and accepted. CONSULTANT may choose to retain 10% of contract fee until completion of DASNY instruction. Unless otherwise directed by CONSULTANT,

- C. There is a minimum of 30 hours of end-user instruction included in this specification.
- D. Unless requested otherwise: the instruction sessions is divided into three groups. The first group will be "Super-users" who are trained on all aspects of the AV Systems including operations and trouble-shooting. The second group is a wider group of users who will be trained on general operations. Finally, the Contractor is to provide follow-up instruction for users who require "refresher" instruction, up to the maximum number of hours included.

#### 3.10 PUBLICATION

A. No information relative to this job may be released for publication without prior written approval from CONSULTANT and **DASNY**.

#### 3.11 INSTALLATION PRACTICES

#### A. General

- Installation will include the delivery to the installation site, unloading, setting in place, fastening to walls, floors, ceilings, counters, or other structures where required, interconnecting wiring of the system components, equipment alignment and adjustment, programming and configuration and all other work whether or not expressly required herein which is necessary to result in complete and fully operational systems.
- 2. Prior to ordering equipment, the Contractor must coordinate the frequencies of all wireless devices to prevent unwanted interaction between devices and rooms. This includes, but is not limited to, wireless microphones, assisted listening system devices, wireless control panels, etc.
- 3. All accessories, including rack mounting hardware, power supplies, etc., are obtained from the original equipment manufacturer. Unless otherwise noted or specified, third party accessories will not be used.
- 4. All installation practices are in accordance with, but not limited to, these specifications and AV Contract drawings. Installation is performed in accordance with the applicable standards, requirements, and recommendations of National, State, and Local codes.
- 5. If, in the opinion of the Contractor, an installation practice is desired or required, which is contrary to these specifications or AV Contract drawings, a written request for modification is made to the Design Team. Modifications may not commence without written approval from the Design Team
- 6. During the installation, and up to the date of final acceptance, the Contractor is under obligation to protect his finished and unfinished work against damage and loss. In the event of such damage or loss, the damage is replaced or repaired at no cost to **DASNY**.

# B. Physical Installation

- 1. All equipment is firmly secured in place unless requirements of portability dictate otherwise.
- 2. All equipment may have an engraved plaque permanently affixed, denoting its function.
- 3. Fastenings and supports are adequate to support their loads with a safety factor as per AHJ. All boxes, equipment, etc., are secured plumb and square.
- 4. Projectors, lenses, and mirrors are solidly mounted and braced or isolated, so that there is no observable movement in the image induced by motor vibration or other mechanical operations at the intended minimum viewing distance.
- 5. In the installation of equipment and cable, consideration is given not only to operational efficiency, but also to overall aesthetic factors.
- 6. All overhead equipment must have security cables attached to the building structure to assist in the prevention of loss as required by building code.

# C. Finishes, Trim and Escutcheon Components

- 1. To insure a proper finished appearance, the Contractor is to furnish and install trim/escutcheon components at all conditions where A/V components pass through the finished ceilings. This would include but not be limited to video projector supports, television monitor/receiver supports and any other component which is not specifically supplied with integral flanges/trim components, i.e. speaker mounts, assistance listening devices, etc.
- 2. The visible component of any trim should be minimal in size, preferably no wider than 1/2". All trim components at the ceiling plane are finished to match the approved ceiling finish. The audiovisual Contractor should obtain a sample from the General Contractor, including any custom color information, or standard color numbers.
- 3. All visible components and finish options are submitted to the Design Team for review and approval prior to fabrication.
- 4. Raceway Systems and Cable Installation
- 5. All Cable must be Shielded, all connectors must be shielded and as per Audiovisual Systems Equipment manufacturers' specifications.
- 6. All wire bundles are to be neat and combed free of cable crossovers.
- 7. All cables, regardless of length, are marked with a permanent, self-laminating wraparound number or letter cable marker at both ends, similar to the Panduit "Pan-Code" system. Labels must be computer-generated for legibility. Wire labels done by hand in the field must be replaced with computer generated labels. There are no unmarked cables at any place in the system. Marking codes used on cables must correspond to codes shown on shop/installation drawings and or run sheets.
- 8. Group all cables are according to the signals being carried on them. In order to reduce signal contamination, group cables into the separate families:
  - a. Power cables
  - b. Control cables
  - c. Video cables
  - d. Audio cables carrying signals less than 20 dBm
  - e. Audio cables carrying signals between 20 dBm and +20 dBm
  - f. Audio cables carrying signals above +20 dBm

- 9. As a general practice, all power cables, control cables, and high-level cables run on the left side of an equipment rack as viewed from the rear. All other cables run on the right side of an equipment rack, as viewed from the rear.
- 10. Cables ties are placed at appropriate intervals of no greater than six inches for vertical bundles, two inches for horizontal bundles.
- 11. All vertical cable bundles are attached to the rack frame.
- 12. All cables are continuous lengths without splices. All system wire, after being cut and stripped, must have the wire strands twisted back to their original lay and be terminated by approved soldered or mechanical means. Except where noted otherwise in the specifications, NO BARE WIRE TERMINATIONS WILL BE ACCEPTED. Heat-shrink tubing is used to insulate the ground or drain wire. Unused wires at the end of a cable are to remain unstripped and are laid back and held in place with wire ties.
- 13. All solder connections are made with rosin-core solder using temperature-controlled solder stations. Care is taken to avoid cold or cracked solder joints. Any connections that do not appear to be clean and shiny, or which show signs of cracking, is re-soldered by the Contractor before final acceptance of the system.
- 14. Mechanical connections using insulated, crimp-type connectors are bonded to the connector by soldering the wire to the metal part of the connector.
- 15. Connections made with screw actuated pressure type terminal strips are made by stripping approximately 1/4 inch of insulation from the stranded conductor. Then the un-tinned wire is inserted into the terminal and the screw tightened using a secure fitting precision screwdriver.
- 16. Terminal blocks, boards, strips or connectors are furnished for all cables which interface with racks, cabinets, consoles, or equipment modules. No audio cables are to run directly to the audio patch panel jacks. Each audio patch panel is furnished with an audio terminal block, and all audio cables to and from the audio patch panel are to terminate on this block.
- 17. All wire markers are to face a common direction.
- 18. All cables are to have proper connector housing.
- 19. Cables will not protrude from the back of racks.
- 20. All cable entry is through the tops of racks or through entrance holes in the base of the rack. No cable is to enter racks through front, rear or side panel openings.
- 21. All cables that can be terminated in the field (except video and pulse cables, which must be cut to an electrical length) are cut to the length dictated by the run. No splices are permitted in any pull boxes without prior permission of the CONSULTANT. For equipment mounted on casters, in drawers or on slides, the interconnecting cables are provided with a service loop of appropriate length.
- 22. No cable is installed with a bend radius less than that recommended by the cable manufacturer.
- 23. Where cables are visible, the cables will be sheathed in a color wrap that has been submitted for approval by the Design Team.
- D. Connection Plate Receptacles unless otherwise specified
  - 1. Audio (microphone or line level) XLR type.

- 2. Audio (loudspeaker level) Neutrik Speakon®.
- 3. RF "F" type. Receptacles are insulated from panel type.
- 4. HDMI HDMI with locking nut.
- 5. USB USB Type A
- 6. Category 5/6 RJ45 Type (Shielded)
- 7. Note: All connectors on wall plates, or in other exposed locations, are to be recessed.

# E. Patch Panel Assignments

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

# F. Patch Panel Designation Strips

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

# G. Maintaining Ground Integrity

- 1. In order to minimize problems resulting from improper grounding, and to achieve maximum signal-to-noise ratios, the following grounding practices are adhered to in order to maintain the integrity of the grounding system.
- 2. Because of the great number of possible variations in grounding systems, it is the responsibility of the Contractor to follow good engineering practice, as outlined below, and to deviate from these practices only when necessary to minimize crosstalk, ground loops, ground-induced noise, and to maximize signal-to-noise ratios in the audio, video, and control systems.
- 3. System Power Ground:
  - A single primary "system ground" is established for the system in each particular area. All grounding conductors in that area connects to this primary system ground.
  - b. The system ground is provided at the audio equipment rack for the area and is to consist of a copper bar of sufficient size to accommodate all secondary ground conductors. A copper conductor having a maximum of 0.1 Ohms total resistance will connect the primary system ground bar to the nearest approved ground. The Contractor is responsible for determining if the metallic conduit is properly electrically bonded to the building ground system.
  - c. Secondary system grounding conductors are provided between all racks, audio consoles, and audiovisual system equipment local to the area. Each of these grounding conductors are to have a maximum of 0.1 Ohms total resistance.

- d. Under no conditions will the AC neutral conductor, either in the power panel or in a receptacle outlet, be used as a system ground, except as specifically defined by NFPA 70 for bonding.
- e. Ungrounded equipment with either an inline transformer or a 2-prong plug, is bonded to the rack bus bar using #12awg cable.

#### 4. Audio Cable Shields

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

#### 5. Video Receptacles

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

# 6. Audio Receptacles

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

# 3.12 GENERAL SYSTEM PERFORMANCE STANDARDS

A. Unless restricted by the published specifications of a particular piece of equipment, or unless otherwise required under the Detailed Specifications, the following performance standards are met by each system. The signal paths for the above Performance Standards are as follows: From all source inputs to all signal destinations. Refer to Contractor System Checkout for testing procedures.

# 1. Analog Audio

- a. Frequency Response Within plus or minus 0.5dB, 20 Hz to 20,000 Hz
- b. Signal to Noise Ratio Greater than 90dB (including crosstalk and hum at all input / output levels)
- c. Total Harmonic Distortion 0.05% maximum from 20 Hz to 20,000 Hz.

# 2. Input Levels:

- a. Microphone (Nominal) -50dbu
- b. Overload (Minimum gain)-5dbu
- c. Maximum Gain -26dbu
- d. Line (Nominal) +4dbu
- e. Overload (Minimum gain)+24dbu
- f. Maximum Gain +9dbu

- g. Input Common Mode Rejection >100db
- 3. Output Levels
  - a. Line (Nominal) +4dbu
  - b. Maximum +24dbu
  - c. Output Impedance < 0.5 Ohms
  - d. Load Impedance >150 Ohms
- 4. Analog Video (signal)
  - a. Frequency Response: Within plus or minus 0.5dB, DC to 4.2 MHz
  - b. Signal to Noise Ra: 55 dB minimum, (peak to RMS) unweighted, DC to 4.2 MHz
  - c. Crosstalk: 45 dB minimum, unweighted DC to 4.2 MHz
  - d. Line and Field Tilt: 2% maximum
  - e. Differential Gain: 3% maximum, 2 degrees maximum
- 5. SDI:Per SMPTE 259M
- 6. HD SDI: Per SMPTE 292M
- 7. HD SD I(Dual Link); Per SMPTE 424M
- 8. 3G SDI: Per SMPTE 424M
- 9. HDMI: Per HDMI Ver. 2.0
- 10. HDCP: Per HDCP2.2
- 11. Audio Video Bridging (AVB)
  - a. IEEE 802.1AS: Timing and Synchronization for Time-Sensitive Applications
  - b. IEEE 802.1Qat: Stream Reservation Protocol (SRP)
  - c. IEEE 802.1Qav: Forwarding and Queuing for Time-Sensitive Streams
  - d. IEEE 802.1BA: Audio Video Bridging Systems

#### 3.13 CONTRACTOR'S SYSTEM TESTING

- A. At a minimum, the following sub-components of the Audiovisual System are tested, and verified:
  - 1. Cable and Connectors
    - All cables and connectors are tested and verified to comply with the manufacturer's specifications and design intent.
    - b. Cable test results are submitted in advance of the Commissioning for review by CONSULTANT.
  - 2. Devices
    - a. All devices shall meet the functionality as specified by manufacturer.
    - b. If any device is found to deviate from the manufacturer's functionality it is replaced by the Contractor at no cost to CONSULTANT or **DASNY**.
  - 3. Signal Types

a. The Audiovisual System is tested to comply with all video and audio standards as specified in the Performance Standards section and described by the design intent.

# 4. System Function

- a. The cables and connectors, devices, and signal types are to meet the functional requirements as specified by the design intent.
- Acceptable testing procedures may include but is not limited to that which is described in the detailed specifications such as (streaming, push-to-talk, annotation, etc.)
- c. Document that all matrix switching cross points have been tested and verified.

#### 5. Network

- a. Compliance with **DASNY**'s network configuration and security requirements is the responsibility of the Contractor. Respect to **DASNY's** configuration and security requirements may apply even if the network devices reside on a network that is considered independent and isolated from the other network services.
- b. For this purpose of this document, Network cabling may include:
  - 1) Network jacks terminating the user end of a connection, structured cabling in the walls, ceilings, or furniture, Network jacks terminating the patchpanel end of a connection and Patch panels used to terminate connections
  - 2) All copper cabling installed as network cabling is to conform to, or exceed, the CAT6 specification for network cabling. This is to include all components of a connection, as listed in (a) above.
  - 3) All copper cabling installed for "digital video/audio/control transport/HDBaseT" is to conform to, or exceed, the CAT6a specification for network cabling. This is to include all components of a connection, as listed in (a) above.
  - 4) All fiber cabling installed as network cabling is to conform to, or exceed, the TIA 492AAAD specification for network cabling. This is to include all components of a connection, as listed in (a) above.

# 3.14 TEST EQUIPMENT

- A. The following properly calibrate test equipment (or submit equivalent for approval) is used to configure, test and demonstrate the systems on site.
  - 1. Video Testing:
    - a. Digital Video test generator with EDID and HDCP components, Kramer 860 or similar
    - b. Media and portable hardware (i.e laptop) representative of all types found in the subject system including but not limited to Blu-ray ™ players and discs (provide discs with and without HDCP encrypted content), mobile PC/Tablets.
    - c. Set of terminations, 'T' pieces etc.

# 2. Audio Testing:

- a. Time based measurement system, Goldline TEF20 or SIA Smartlive with laptop PC, calibrated omnidirectional mic, and appropriate interfaces
- b. Audio test set, Audio Precision ATS-1DD
- c. Media representative of all types found in the subject system
- d. Audio cables as required to connect test equipment to the system
- e. Set of terminations, adapters etc.

# 3. Gain Setting

a. Adjust all systems (end to end within a system) for maximum signal-to-noise ratio. No hiss should be audible through any loudspeaker at the completion of gain structure setting, and all audio gain stages should clip simultaneously.

# 4. Audio Signal Paths

- a. Connect the output of the audio test set to a floor box/table/rack program audio connector and connect the input of the audio test set to a final output point, e.g. an input to a program speaker power amplifier. Ensure that the test signal is routed to the selected output, that the volume control is set to 100% and that the equalizers are bypassed.
- b. Measure and record the signal/noise ratio, total harmonic distortion and frequency response.
- c. Repeat items 'xii' and 'xiii' for other audio signal paths.
- d. Connect the output of the audio test set to a floor box/table/rack speech audio connector and connect the input of the audio test set to a final output point, e.g. an input to a speech speaker power amplifier. Ensure that the test signal is routed to the selected output, that the volume control is set to 100% and that the equalizer is bypassed.
- e. Measure and record the signal/noise ratio, total harmonic distortion and frequency response.
- f. Repeat items 'xv' and 'xvi' for other audio signal paths.

#### 5. HDMI

- a. Connect the HDMI output of the signal generator to a floor box/table/rack connector and select the HDMI signal at the various scan rates as follows:
  - 1) 720 X 480p @60Hz
  - 2) 1024 X 768 @60Hz
  - 3) 1280 X 720p @60Hz
  - 4) 1920 X 1080p @60Hz
  - 5) 1920 X 1200 @60Hz
  - 6) 3840 x 2160 @60Hz
- b. Check that the image is correctly displayed on the picture monitor(s) and/or by the video projector.
- c. Repeat item '1' using Crosshatch signal, checkerboard signal and H Pattern signal.
- d. Repeat item '2' for other HDMI connection locations.

#### 6. At the end of the tests:

- a. Provide written records of all test results in spreadsheet form.
- b. Check all control functions, from all controlling devices to all controlled devices, for proper operations.
- c. Adjust, balance, and align all equipment for optimum quality and to meet the manufacturer's published specifications. Establish and mark normal settings for all level controls and record these settings in the "System Operation and Maintenance Manual".
- d. Check all optical projection images for average light level, light fall-off, and image alignment and size to comply with the Performance Standards and specifications drawings. Check to determine that all projectors, projector bases, carts, tables, and mirrors are rigid and vibration-less in operation.
- e. Maintain documentation of all performance tests for reference by CONSULTANT during the Commissioning.

#### 3.15 CONTRACTOR'S SYSTEM CHECKOUT: STAGING

- A. Before delivery to the jobsite, all systems are staged in the Contractor's shop. A test of the AV system, with peripheral equipment and working control system programming is scheduled. CONSULTANT and **DASNY** may elect to inspect the staging.
  - Notification of any revisions to staging schedule (included in the Contractor's project schedule/milestones) is communicated to the project team by the Contractor's project manager one week in advance of staging. No less than 24 hours of acceptance, a test report is prepared and signed by qualified individual described above, using the Staging Checklist template submitted and approved in advance by the CONSULTANT, and issued to the project team stating that the system(s) is ready for review.
  - 2. The CONSULTANT may elect to request a remote demonstration of the readiness of the staged system prior to on-site inspection. The AV System Installer is to pre-test and arrange a web conferencing call with audio and video camera in the staging area in order to sufficiently demonstrate the staged system's functionality.
- B. The Contractor must request in writing and receive approval by the CONSULTANT to the staging of "typical" systems of each type. The arrangement is incorporated into the Contractor's milestones and issued to the team. The Contractor's request is to include the methodology that will be implemented to assure quality assurance for the remaining systems.
- C. On the day of staging, both subjective and objective tests will be demonstrated to the CONSULTANT to determine compliance with the specifications. The Contractor is responsible for providing calibrated test equipment and test material for these demonstrations.
- D. Network configuration and security
  - All videoconferencing, unified collaboration, IP cameras, transmitters, receivers and AV over IP distribution systems are staged on as close approximation of **DASNY**'s network as possible.

- Compliance with DASNY's network configuration and security requirements is the
  responsibility of the Contractor. To the extent possible, all network devices are
  configured in advance in the Contractor's shop to DASNY-provided network security
  requirements. Respect to DASNY's security requirements is to apply even if the network
  devices will reside on a network that is considered independent and isolated from the
  other network services.
- E. Upon completion of the staging, the CONSULTANT will issue a staging punch list identifying non-conformance and performance notes and the responsible party. The Contractor's Project Manager will maintain the punch list henceforth, issue a response within 24 hours with the expected resolution date, identified **DASNY** of the item and tasks required to achieve closure. The Contractor will own the list through to closure of all items, issuing updates no less than weekly, responding to all quires in writing by the project team.
  - Non-Conformance: If during checking the CONSULTANT identifies any system
    components or functionality does not perform as expected, the acceptance for that
    system will stop. The discrepancy will be noted on the punch list the representative will
    be notified. The CONSULTANT will proceed to the next system. Non-conformance on key
    components and software require a full re-test of the system by the Contractor after
    remediation. Additional fees may be incurred if the CONSULTANT is asked to repeat the
    acceptance process.
  - 2. Performance Notes: Items that do not impact the system design but are not in alignment with expected system completion may be identified during acceptance checks. The items are noted by the CONSULTANT on the punch list, addressed by the Contractor without requiring system reacceptance, with completion noted in punch list updates.

## 3.16 CONTRACTOR'S SYSTEM CHECKOUT: ON-SITE ACCEPTANCE

- A. It is the responsibility of the Contractor to fully test the audiovisual systems prior to CONSULTANT 's final on-site check-out. Acceptance will not be performed until the Contractor's has notified the project team that system is ready the test results have been submitted to the project team and reviewed by the CONSULTANT. The Contractor's checkout process is in accordance with AVIXA/Infocomm's most current standard for Audiovisual Systems Performance Verification.
- B. One Week Prior to Acceptance:
  - 1. The Contractor is to provide a schedule of the rooms/systems that will be ready for acceptance for the upcoming week. The CONSULTANT is to determine the days and times that they will be available on site to accept these rooms.
- C. Two Days Prior:
  - 1. Completed test sheet for each space.

- 2. Written confirmation that space has been full tested.
- 3. Designated individual who will be available during acceptance, including email and cell phone
- 4. As-Built documentation in electronic form:
- 5. Equipment lists with serial numbers
- 6. Network Data sheet
- 7. System drawings
- 8. Staging Snagging List
- 9. Software Documentation: The Contractor will provide a copy of the Software and Firmware Maintenance contract to CONSULTANT prior to system acceptance.

# D. Day of Acceptance

- 1. The acceptance process will consist of the following at a minimum:
  - a. The operation of all system equipment is demonstrated by the Contractor. Both subjective and objective tests will be required to determine compliance with the specifications. The Contractor is responsible for demonstrating compliance with the specifications using properly calibrated test equipment and test material.
  - b. A physical inventory of all equipment on site compared to equipment lists in the contract documents.
  - c. Review of final As-Build documentation (hard copy provided by AV Contractor) as described in the "Contractors Documentation" section of this specification
  - d. Space is clear of all refuse, clean, complete and in operational-ready state
  - e. Contractor will demonstrate to CONSULTANT and **DASNY** that the system conforms to the functional requirements detailed in the bid specification (or revised through documented submittal and RFI process), and the system is installed to the performance standards set forth.
  - f. If any non-conformance, where further adjustment is required, or where defective equipment must be repaired or replaced, the CONSULTANT may choose to immediately suspend the acceptance process and proceed to the next system that is ready for system. It is the responsibility of the Contractor to perform remediation outside the acceptance session.

# 2. Post-Acceptance and Snagging List

- a. The CONSULTANT will issue a commissioning punch list identifying non-conformance and performance notes and the responsible party. The Contractor's Project Manager will maintain the punch list henceforth, issue a response within 24 hours with the expected resolution date, identified **DASNY** of the item and tasks required to achieve closure. The Contractor will own the list through to closure of all items, issuing updates no less than weekly, responding to all quires in writing by the project team.
- Any modifications to the system after acceptance process, including but not limited to replacing hardware, updating firmware, changing audio settings and updates to the control system will require a full re-test of the system. The Contractor's are to coordinate a re-acceptance arrange at the convenience of the

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- project team and CONSULTANT and address any impact to the schedule. The Contractor will absorb all costs associated with additional system tests and reacceptance due to improper system installation, configuration or previous failed system tests.
- c. All effort is made by the Contractor to complete the acceptance process before DASNY's scheduled first-use milestone, meaning that all non-confirming punch list items are closed, and the system is signed off by DASNY. If the system cannot be fully accepted before first-use, then the Contractor must arrange all remediation work outside of DASNY's scheduled use (i.e. nights and weekends), and fully re-test the system before the next scheduled use from DASNY, at no additional cost to DASNY, until all punch list items are resolved to CONSULTANT and DASNY's satisfaction.

**END OF SECTION** 



Baruch	n Field Building Renovation F	Phase 2			В	Bulletin 5	10-Oct-23
Audiov	visual System Summary						
				NON	CVCTEM		CVCTEM
ITEM	SYSTEM NAME	ROOM #'s	EQUIPMENT	NON- EQUIPMENT	SYSTEM SUBTOTAL	QTY	SYSTEM Extended
	Multipurpose Room					1	
	Digital Signage					1	
				TOTAL EQUIP	MENT COST SU	BTOTAL	
			TO1	AL NON-EQUIP	MENT COST SU	BTOTAL	
				T	OTAL INSTALLE	D COST	



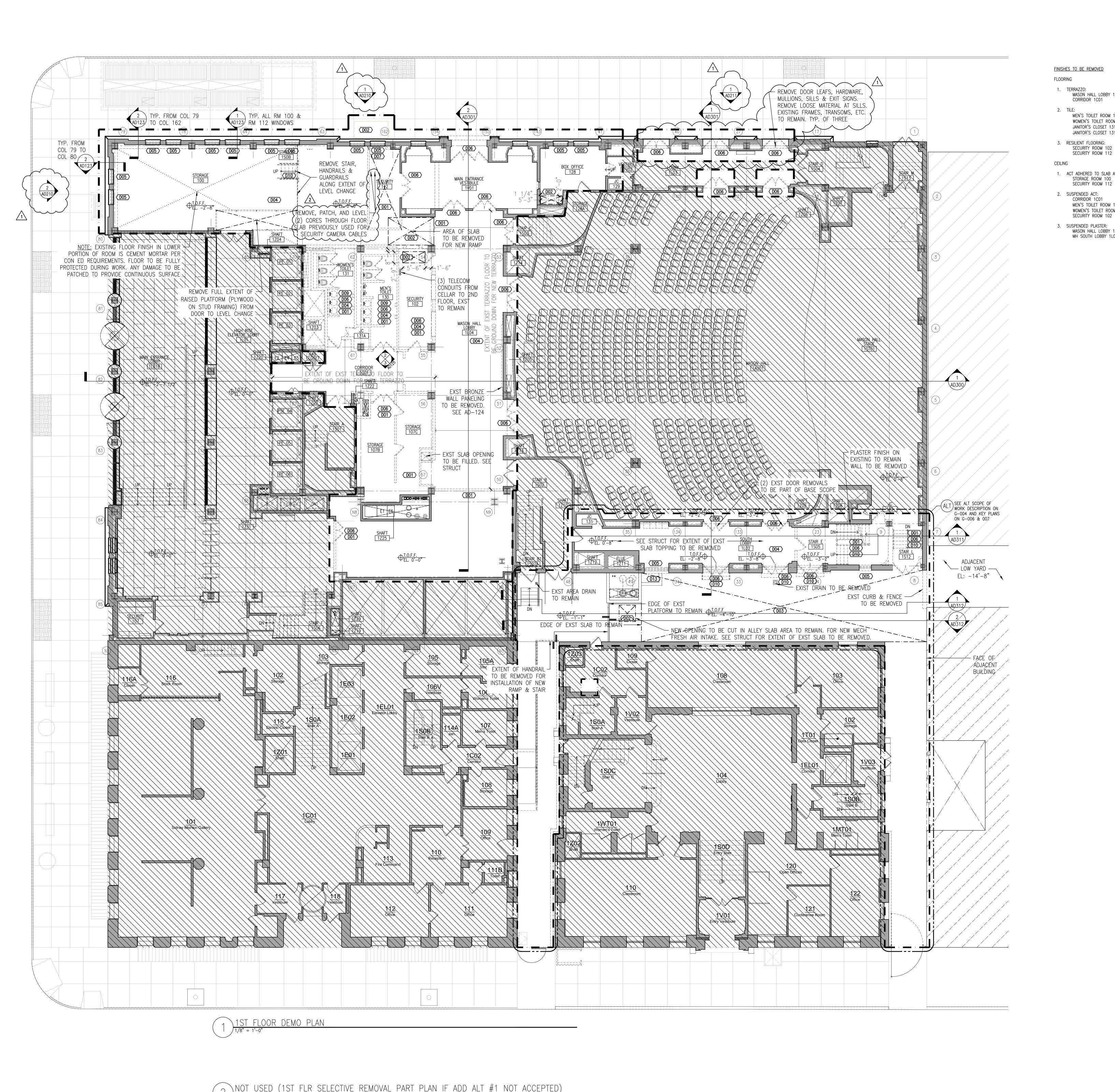
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Multipurpo							- Bulletin S	10-001-
nuitipui po	50 100111							
ID	DESCRIPTION	MFR	MODEL	NOTES	QTY	UNIT COST	EXTENDED	SYSTEM SUBTOTA
ID	DESCRIPTION	WIFK	WODEL	NOTES	QIT	UNITCOST	COST	STSTEM SUBTUTA
ROJECTI								
PRJ-01	Laser Video Projector, 7000 Lumen, UHD w/zoom lens	NEC	NP-PA703UL-41ZL	OFEOI	1		\$ -	
SCR-116	Motorized Projection Screen, ceiling recessed mounted, tab tensioned, 116"x65" (133" Diagonal)	Da-Lite	Tensioned Advantage (#21797LS)		1		\$ -	
PRJ-01	Heavy Duty Universal Ceiling Mount for Video Projector	Chief	VCM46E	OFEOI	1		s -	
PRJ-01	Extension Column, Adjustable 9"-12"	Chief	CMS009012	OFEOI	1		\$ -	•
110 01	AV Receiver - 4K Scaler	Crestron	DM-RMC-4KZ-SCALER-C	OFEOI	1		\$ -	
LAT PAN	EL DISPLAYS	-						
PD-98	Flat Panel Display - 98"	NEC	C981Q	OFEOI	2		\$ -	
	Flat Panel Display - Wall Mount Fixed Extra-Large	Chief	XTM1U	OFEOI	2		\$ -	
	AV Receiver - 4K Scaler	Crestron	DM-RMC-4KZ-SCALER-C	OFEOI	2		\$ -	
IDEO SOL	JRCES							
AM-01	Video Camera - Auto Tracking/AutoPTZ, 20x Zoom, white	1 Beyond	IV-CAMA3-20-N-W-1B	OFEOI	4		\$ -	
	HD-SDI to HDMI Converter	Black Magic Design	Micro Converter	OFEOI	4		\$ -	
CAM-01	Wall Mount for Auto Tracking/AutoPTZ Camera, white	1 Beyond	SDI to HDMI 3G IVA-WMT-SHELF-1B	OFEOI	4		\$ -	
	Host PC	OFE	OFE	OFEOI	1		\$ -	
	Wireless Video Gateway	Mersive	Solstice POD Gen3 SGE	OFEOI	3		s -	
		Mersive	Enterprise	OFEOI	3		5 -	
/IDEOCON	IFERENCING SYSTEM							
	AV to USB Bridge Encoder/Decoder	Vaddio	AV Bridge	OFEOI	1		\$ -	
IDEO SW	ITCHING & DISTRIBUTION SYSTEM		(#999-8210-000)			l	<u> </u>	
IDEO 344	Video Matrix Switcher - 7x4 4K w/Wireless Gateway	Crestron	DMPS3-4K-350-C	OFEOI	1 1	l	T\$ -	
	AV Transmitter - HDMI Wall Plate	Crestron	DM-TX-4KZ-100-C-1G	OFEOI	1		\$ -	
UDIO PR	OCESSING & DISTRIBUTION SYSTEM	Crocacii	BIII 174 III.E 100 0 10	10. 20.		L	Ţ	
	Audio DSP - Frame w/ Dante	Biamp	Tesira SERVER-IO	OFEOI	1		- \$	
	Audio DSP - Input Card VoIP	Biamp	Tesira SVC-2	OFEOI	1		\$ -	
	Audio DSP - Input Card AEC 4ch.	Biamp	Tesira SEC-4	OFEOI	2		\$ -	
	Audio DSP - Input Card Analog 4ch.	Biamp	Tesira SIC-4	OFEOI	1		\$ -	
	Audio DSP - Output Card Analog 4ch.	Biamp	Tesira SOC-4	OFEOI	2		\$ -	
	Audio DSP - Dante Network Card Interface	Biamp	Tesira DAN-1	OFEOI	1		\$ -	
	Audio Amplifier - 8ch. 175wpc	Biamp	Tesira AMP-8175R	OFEOI	2		\$ -	
	Assistive Listening System, Wi-Fi/IR to include:	Listen Technologies	Quote #	OFEOI	1		\$ -	
	Wi-Fi/IR Advanced (Dante) System	Listen Technologies	LCS-122-01-D	OFEOI	1		\$ -	
	Wi-Fi 2 Ch. Server	Listen Technologies	LW-100P-02	OFEOI	1		\$ -	
ST-01	2-Ch TX/Radiator Combo	Listen Technologies	LT-84-01	Mounted on front wall OFEOI	1		\$ -	
ST-01	Wall Plate Mount for 2-Ch TX/Radiator Combo, white	Listen Technologies	LA-347-WH	Mounted on front wall OFEOI	1		\$ -	
	Remote Power Supply Kit for IR Radiator	Listen Technologies	LPT-A117	OFEOI	1		\$ -	
	Intelligent DSP IR Receiver	Listen Technologies	LR-4200-IR	OFEOI	4		\$ -	
	Universal Ear Speaker	Listen Technologies	LA-401	OFEOI	4		\$ -	
	Intelligent Earphone/Neck Loop Lanyard	Listen Technologies	LA-430	OFEOI	4		\$ -	
	4-Port USB Charger	Listen Technologies	LA-423	OFEOI	1		\$ -	
	Dante 2 Ch. Output XLR Adapter	Listen Technologies	LA-466	OFEOI	1		\$ -	
PK-01	Loudspeaker - Ceiling Recessed 6.5", w/transformer	JBL	Control 26CT	OFEOI	10		\$ -	
VIRED MIC	CRPHONES							
1IC-01	Microphone - Ceiling-Mount, 2'x2' Grid w/ DANTE	Shure	MXA910	OFEOI	4		\$ -	
/IRELESS	MIC SYSTEM							
	Wireless Mic - Receiver 4ch.	Shure	ULXD4Q	OFEOI	1		\$ -	
	Wireless Mic - Handheld Tx Beta58	Shure	ULDXD2/B58	OFEOI	2		\$ -	
	Wireless Mic - Bodypack Tx	Shure	ULDXD1	OFEOI	2		\$ -	
	Wireless Mic - Headset Mic	Shure	MX153	OFEOI	1		\$ -	
	Wireless Mic - Mini Lavalier, Cardioid	Shure	MX150/C	OFEOI	1		\$ -	
	Wireless Mic - Battery Charger 8-bay	Shure	SBC800-US	OFEOI	1		\$ -	
	Wireless Mic - Battery	Shure	SB900A	OFEOI	4		\$ -	
	Wireless Mic - Antenna Dist. Amp	Shure	UA845-SWB	OFEOI	1		\$ -	
	Wireless Mic - Directional Antenna	Shure	UA874	OFEOI	1	1	1 @	



Baruch Fie	eld Building Renovation Phase 2						Bulletin 5	10-Oct-
ultipurpo	ose Room							
ID	DESCRIPTION	MFR	MODEL	NOTES	QTY	UNIT COST	COST COST	SYSTEM SUBTOTA
ONTROL	SYSTEM							
	Network Switch - Managed 24-Port Gigabit Ethernet PoE	Cisco	WS-C2960X-24PS-L	OFEOI	1	\$	-	
P-07	Control Touch Panel - 7" Wall Mounted	Crestron	TSW-770	OFEOI	3	\$	-	
	Control System Programming	Custom	By AV Contractor		1	\$	-	
ISC. EQU	JIPMENT & SYSTEMS							
CK-01	Equipment Rack - Full-Height 45RU, 32"D, AV Configured	Middle Atlantic	BGR-4532-AV	OFEOI	1	\$	-	
	Castered Base for Equipment Rack	Middle Atlantic	CBS-BGR	OFEOI	1	\$	-	
	Rack Drawer - 2 RU	Middle Atlantic	D2	OFEOI	1	\$	-	
	Surge Suppressor/Power Distribution	Surge-X	SEQ	OFEOI	1	\$	-	
EC-01	Custom Lectern w/12RU rack, sliding Keyboard Shelf, folding side shelf, monitor arm	Middle Atlantic	L2 Series (Quote #)	OFEOI	1	\$	-	
	Misc. Wire, Cables, Plates/Panels & Connectors	Custom	By AV Contractor	OFEOI	1	\$	-	
			COST ESTIMATE SUMMAR	Υ				
					TOT	AL EQUIPMENT COS	ST SUBTOTAL	
					TOTAL NO	ON-EQUIPMENT COS	ST SUBTOTAL	
							ENGINEERING	
						PROJECT N	MANAGEMENT	
					PRE-INST.	ALLATION & RACK	FABRICATION	
						1	NSTALLATION	
						ELECTRICAL II		
							TAX	
							G&A	
						TOTAL INS	TALLED COST	



Baruch Fi	eld Building Renovation Phase 2						Bulletin 5	5 10-Oct-2
Digital Sig	nage							
ID	DESCRIPTION	MFR	MODEL	NOTES	QTY	UNIT COST	EXTENDED COST	SYSTEM SUBTOTA
FLAT PAN	IEL DISPLAYS							
FPD-65	Flat Panel Display - 65"	NEC	M651	OFEOI	1		\$ -	
	Flat Panel Display - Wall Mount Fixed Large	Chief	LTM1U	OFEOI	1		\$ -	
VIDEO SO								
	Existing Digital Signage App	Omnivex	Moxie App	OFEOI	1		\$ -	
	Digital Signage Player	Brightsign	HD223	OFEOI	1		\$ -	
MISC. EQI	JIPMENT & SYSTEMS							
	Misc. Wire, Cables, Plates/Panels & Connectors	Custom	By AV Contractor	OFEOI	1		\$ -	
			COST ESTIMATE SUMMAR	RY				
					TOT	AL EQUIPMENT	COST SUBTOTAL	
					TOTAL N	ON-EQUIPMENT (		
							ENGINEERING	i
						PROJEC	T MANAGEMENT	•
					PRE-INST	ALLATION & RAC	K FABRICATION	I
							INSTALLATION	
						ELECTRICA	L INSTALLATION	
							TAX	
							G&A	\
						TOTAL II	NSTALLED COST	



GENERAL DEMOLITION NOTES

SCOPE OF WORK.

SPECIFICATIONS.

OF WORK CAREFULLY.

PERMANENT SUPPORTS.

AND CONSTRUCTION.

CONTRACTOR

ALTERATION WORK.

DEMOLITION TAGS Dxx

EXISTING FINISHED TO REMAIN.

IS NEEDED SEE STRUCTURAL DWGS.

SHELVING, ETC.

ADDITIONAL INFÓRMÁTION.

1. G.C. TO PROVIDE PROTECTION BARRIERS DURING DEMOLITION AS

3. FOR ADDITIONAL REMOVAL REQUIREMENTS SEE SPECIFICATION SECTIONS 024100 "DEMOLITION" AND 017000 "EXECUTION AND CLOSEOUT REQUIREMENTS" FOR CUTTING AND PATCHING.

4. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL REMOVAL

5. SEE MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, FIRE ALARM, TELECOM DRAWINGS AND SPECIFICATIONS FOR

CONDUIT, JUNCTION BOXES, WIRING ETC. U.O.N..

INVENTORY STORAGE, TURNOVER ETC.

SCOPE OF MEP/FP/FA AND TELECOM REMOVAL WORK AND

6. FOR ITEMS SCHEDULED FOR REMOVAL, REMOVE ALL ASSOCIATED

HARDWARE, FASTENERS, METAL FRAMING, INSERTS, SWITCHES,

COORDINATE ALL SELECTIVE REMOVALS WITH ALL DRAWINGS &

B. REMOVE WITHOUT DAMAGE ALL ITEMS NOTED TO BE SAVED FOR

9. REMOVE ALL CEILINGS OR SAW CUT PLASTER AND REMOVE PORTIONS OF CEILINGS INCLUDING ASSOCIATED SUPPORTS, CEILING TILES, CEILING GRID TRIM, SOFFITS, FASCIAS, HANGERS, ETC. AS INDICATED ON THE DRAWING. REMOVE ALL LIGHT FIXTURES, EXIT SIGNS, FIRE ALARM DEVICES, AND ASSOCIATED

CONDUIT & WIRING. REMOVE ALL AIR REGISTERS AND DIFFUSERS. COORDINATE WITH MECHANICAL AND ELECTRICAL

10. REMOVE ALL VINYL TILE SHEET, VINYL AND CARPET FLOOR

11. SAW CUT AND REMOVE PARTITIONS AS INDICATED AND

12. CONTRACTORS TO COORDINATE TEMPORARY STRUCTURAL

CONTRACTOR TO SUPPORT EXISTING CONSTRUCTION AS

REQUIRED PRIOR TO INSTALLATION OF NEW LINTELS OR NEW

13. FOR AREAS OF THE WORK TO BE REMOVED BY SAW CUTTING, EDGES OF MATERIAL TO BE CUT ARE TO BE STRAIGHT AND

14. PROVIDE CUTTING, PATCHING AND REPAIR WORK NECESSARY TO

15. ALL EXISTING SERVICES SCHEDULED TO REMAIN ARE TO BE PROTECTED AND REMAIN OPERATIONAL THROUGHOUT DEMOLITION

16. ALL INTERIOR AND EXTERIOR SIGNS THAT ARE REMOVED ARE TO BE RETURNED TO BARUCH CAMPUS FACILITIES AND OPERATION

17. COORDINATE ALL REMOVALS INCLUDING BUT NOT LIMITED TO WALLS, FLOORS & CEILINGS WITH ASBESTOS ABATEMENT

ASBESTOS REMOVAL AND 028300 - LEAD SAFE WORK

18. FOR ADDITIONAL INFORMATION AND REQUIREMENTS. SEE SPECIFICATION 024119 - SELECTIVE DEMOLITION AND

19. PROVIDE PROTECTION AS REQUIRED TO AVOID DAMAGE TO

1. CAREFULLY SAW CUT WHERE NEEDED, AND REMOVE PARTITION AS INDICATED INCLUDING BASE AND MOLDINGS. WHERE LINTEL

SAW CUT SLAB OPENING. SEE STRUCTURAL DRAWINGS FOR DETAILS AND ADDITIONAL INFORMATION. SEE STRUCTURAL DRAWINGS FOR EXTENT OF REMOVALS AND ADDITIONAL

3. REMOVE FLOOR CONSTRUCTION INCLUDING SLABS AND BEAMS

5. REMOVE WINDOWS, METAL PANELS AND LOUVERS DOWN TO

6. REMOVE DOORS, DOOR FRAMES AND ASSOCIATED HARDWARE.

8. REMOVE FINISHES AND CONCRETE TO FULLY EXPOSE STEEL

9. REMOVE LAB BENCHES, MILLWORK, TOILET ROOM PARTITIONS.

10. REMOVE FINISH FLOOR, TREADS AND RISERS, REMOVE WALL

11. REMOVE ALL ROOFING, FLASHING AND SUBSTRATES DOWN TO

12. SAW CUT AND REMOVE EXTERIOR WALL AND ASSOC. INTERIOR AS INDICATED, INCLUDING BASE AND MOLDINGS, REFER TO

ASSOCIATED HARDWARE. SEE STRUCTURAL DWGS. FOR NEW

14. SEE STRUCTUAL AND SOE DRAWINGS FOR REMOVALS AND

--- ADD ALTERNATE (A#, SEE DESCRIPTION ON G-004)

EXISTING WALL \_\_\_\_ TO BE REMOVED

SHELVING, COUNTERTOPS, BUILT-IN SEATING, ETC. IN AREA

4. REMOVE CEILINGS IN AREA, SEE GENERAL NOTE 7.

MASONRY OPENING, SALVAGE AC UNITS.

7. REMOVE RADIATOR AND ASSOCIATED PIPING

SCHEDULED FOR REMOVALS..

HUNG HAND RAILS AND SUPPORTS.

ARCHITECTURAL PLANS FOR DIMENSIONS

SUPPORT OF EXCAVATION IN THIS AREA.

13. SAW CUT EXISTING MASONRY OR BRICK WALL WHERE INDICATED. THIS INCLUDES BASE & MOLDINGS & ANY

STRUCTURAL CONCRETE SLAB

COLUMN

<u>PLAN LEGEND</u>

■ | ■ | ■ WORK LIMIT LINE

AREA NOT IN SCOPE

DRAWINGS (H SERIES) AND SPECIFICATIONS SECTION 028200-

PRACTICES. FOR REMOVALS TO BE DONE BY HAZARDOUS WASTE

PERFORM THE WORK INDICATED ON THE DRAWINGS. PATCH AND RESTORE MATERIAL TO MATCH ADJACENT FINISHES. PROVIDE PATCHING TO CLOSE AROUND NEW WORK. PROVIDE TEMPORARY SHORING AS REQUIRED AT NEW OPENINGS IN EXISTING FOUNDATION WALL SEE STRUCTURAL DRAWINGS.

PERPENDICULAR TO ADJOINING MATERIAL.

DRAWINGS TO CONFIRM EXTENT OF REMOVAL AREAS AND

FINISHES AND ASSOCIATED ADHESIVE BASE AND TRIM IN AREAS

ASSOCIATED SUPPORTS, BRACES, DOOR FRAMES, DOORS, WALL

SUPPORT AT NEW OPENINGS IN MASONRY & STRUCTURAL SLAB.

PROTECTION, CORNER GUARDS, WALL MOUNTED EQUIPMENT, WALL MOUNTED LIGHT FIXTURES, ACCESS PANELS, SIGNAGE,

RE-USE AND ALL ITEMS NOTED TO BE SALVAGED AND TURNED OVER TO OWNER. SEE SPECIFICATION FOR REQUIREMENTS OF

2. ALL LABELED ITEMS ARE EXISTING U.O.N.

FINISHES TO BE REMOVED

MASON HALL LOBBY 1L04 CORRIDOR 1C01

MEN'S TOILET ROOM 130 WOMEN'S TOILET ROOM 131 JANITOR'S CLOSET 131A JANITOR'S CLOSET 131 (MH SOUTH LOBBY)

RESILIENT FLOORING: SECURITY ROOM 102

1. ACT ADHERED TO SLAB ABOVE: STORAGE ROOM 100 SECURITY ROOM 112

2. SUSPENDED ACT: CORRIDOR 1C01 MEN'S TOILET ROOM 130 WOMEN'S TOILET ROOM 131

3. SUSPENDED PLASTER: MASON HALL LOBBY 1L04 MH SOUTH LOBBY 1L02

ONE NEW YORK PLAZA,

NEW YORK, NY 10004

DAVIS BRODY BOND

NEW YORK DASNY

BODY LAWSON ASSOCIATES 2307 ADAM CLAYTON POWELL JR. BLVD, NEW YORK, NY 10030 212-862-0290

JFK&M CONSULTING GROUF 134 WEST 37TH ST, 12TH FLOOR, NEW YORK, NY 10018 212-792-8700

2 OLD SLIP, 10TH FLOOR, NEW YORK, NY 10005 12-620-7970

LANGAN ENGINEERING

SHEN MILSOM & WILKE 417 FIFTH AVE, NEW YORK, NY 10016 212-725-6800

DESIGN 2147 52 DIAMOND ST, BROOKLYN, NY 11222 718-383-9340

TROPHY POINT 4588 SOUTH PARK AVE, BLASDELL, NY 14219 716-823-0006

145 WEST 30TH ST, 4TH FLOOR, NEW YORK, NY 10001 212-868-9090 WARREN & PANZER ENGINEERS
228 EAST 45TH ST, 2ND FLOOR, NEW YORK, NY 10017
12-922-0077

DOMINGO GONZALEZ ASSOCIATES
29 BROADWAY, 3RD FLOOR, NEW YORK, NY 10006 WISS, JANNEY, ELSTNER ASSOCIATES 1350 BROADWAY, SUITE 910, NEW YORK, NY 10018

East 23rd Street TY KEX AVE 135 E22nd 137 E22nd East 22nd Street

ev No Description 04/15/2022 06/17/2022 07/29/2022 08/25/2022 04/14/2023

DORMITORY AUTHORITY OF THE STATE OF NEW YORK 28 LIBERTY ST, 55TH FLOOR NEW YORK, NY 10005-1400 FIELD BUILDING RENOVATION

PHASE 2

17 LEXINGTON AVE

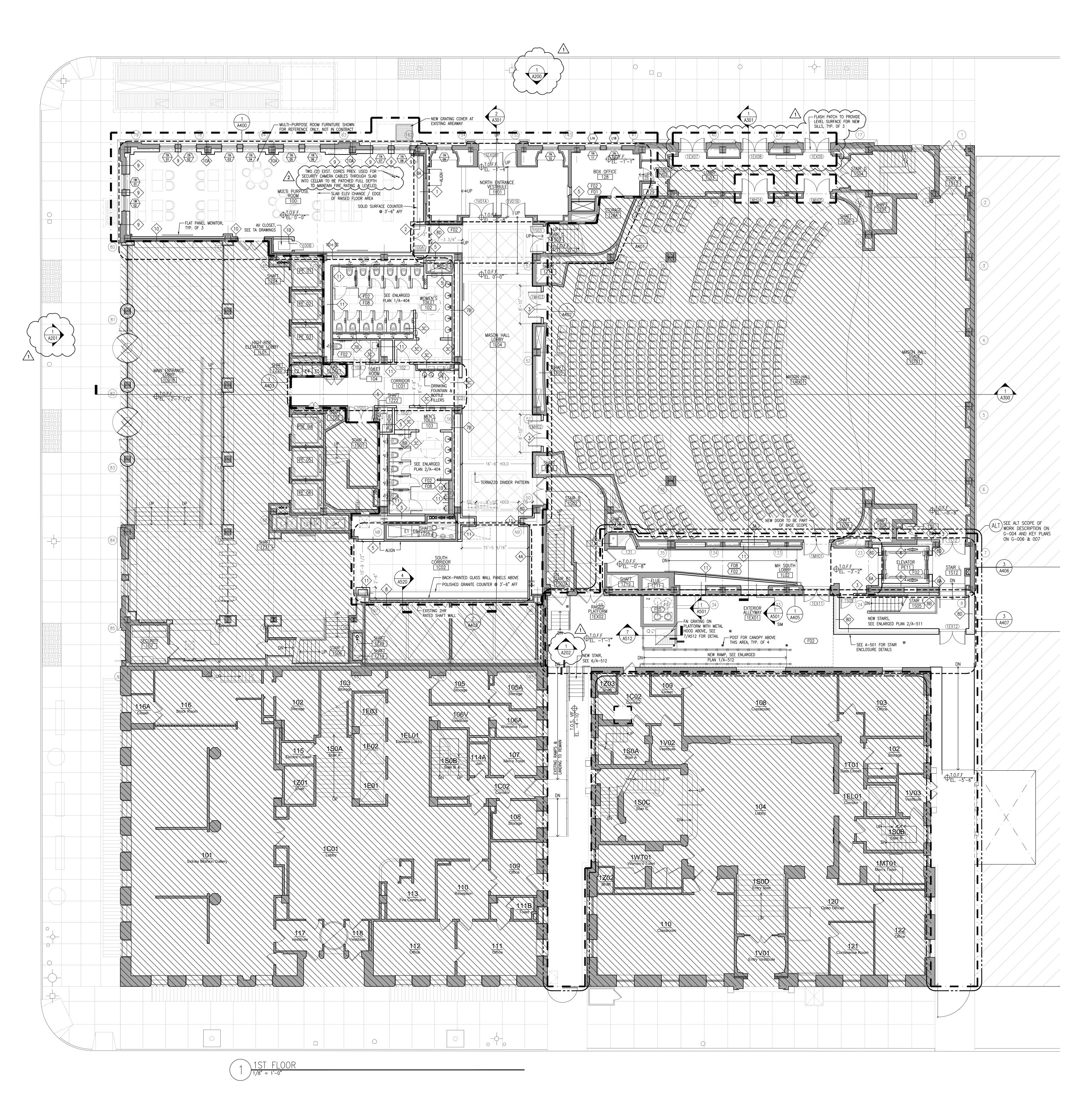
NEW YORK, NY 10010 Architectural

NYC-DOB BSCAN STICKER

NYC-DOB APPROVAL STAMPS

1st Floor Demolition Plan

CONSTRUCTION rofessional Seal & Signature Scale: 1/8" = 1'-



DAVIS BRODY BOND ONE NEW YORK PLAZA,

NEW YORK, NY 10004

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WISS, JANNEY, ELSTNER ASSOCIATES 1350 BROADWAY, SUITE 910, NEW YORK, NY 10018 212-760-2540

135 E22nd 137 E22nd

East 22nd Street

ev No Description 08/25/2022

DORMITORY AUTHORITY OF THE STATE OF NEW YORK 28 LIBERTY ST, 55TH FLOOR NEW YORK, NY 10005-1400 Project Title
FIELD BUILDING RENOVATION PHASE 2

NYC-DOB BSCAN STICKER

NYC-DOB APPROVAL STAMPS

1st Floor Architectural

17 LEXINGTON AVE NEW YORK, NY 10010

CONSTRUCTION Professional Seal & Signature

NOT USED (1ST FLR PART PLAN IF ADD ALT #1 NOT ACCEPTED)

PLAN LEGEND

**GENERAL NOTES** 

SYMBOL LEGENDS

1. ALL LABELED ITEMS ARE NEW, UNLESS OTHERWISE NOTED

2. ALL SPOT ELEVATIONS SHOWN ARE IN RELATION TO CENTRAL PORTION OF 1ST FLOOR, LABELED AS EL: 0'-0". BUILDING

DATUM EL: 0'-0" IS EQUAL TO NAVD88 EL: 30.82, V.I.F.

3. REFER TO SHEET A-001 FOR ABBREVIATIONS, MATERIALS &

4. REFER TO SHEETS A-005, A-500 & A-501 FOR PARTITION

9. REFER TO SHEET A-009 FOR WINDOW & LOUVER SCHEDULES

11. CONTRACTOR TO PROVIDE FIRESTOPPING OF ALL JOINTS AND PENETRATIONS (NEW AND EXISTING) IN FIRE-RESISTENCE RATED AND SMOKE-RESISTANT ASSEMBLIES (NEW AND EXISTING), WITHIN THE PROJECT WORK AREA, WHETHER INDICATED ON DRAWINGS OR NOT, IN ACCORDANCE WITH SPECIFICATION SECTION 07 8400 FIRESTOPPING AND CODES HAVING

12. ALL EXPOSED STRUCTURE, NEW & EXISTING, TO BE SPRAY

13. ALL NEW PARTITIONS, CEILINGS, EXTERIOR WALL SYSTEMS ARE

TO CONFORM TO NYC DOB REQUIREMENTS FOR SEISMIC DESIGN CATEGORY "C". SEE S-200 FOR WIND AND SEISMIC CRITERIA.

14. CONTRACTOR TO PROTECT ALL EXISTING ELECTRICAL, DATA, AND FIRE ALARM CABLES & CONDUITS SERVING EXISTING

15. FOR ADDITIONAL INFORMATION ON ELECTRICAL, SEE ELECTRICAL

16. FOR ADDITIONAL INFORMATION ON SECURITY, SEE SECURITY

17. FOR ADDITIONAL INFORMATION ON TELECOMMUNICATIONS/IT

18. FOR ADDITIONAL INFORMATION ON AUDIO VISUAL, SEE AV

1. SEE MEP/FP/FA DRAWINGS FOR WORK IN THIS AREA

2. SEE STRUCTURAL DRAWINGS FOR WORK IN THIS AREA

3. SLAB OPENING IN EXISTING FLOOR STRUCTURE, SEE STRUCTURAL DRAWINGS FOR DETAILS AND INFORMATION

5. EXISTING CONDENSER WATER PIPING AND ASSOC. SUPPORTS TO REMAIN. CONTRACTOR TO PROVIDE PROTECTION AS REQUIRED

6. NEW LOUVER, SEE SCHEDULE, SPEC 089199, & MECH DWGS

8. CEMENT LEVELING IN THIS AREA WHERE TOPPING REMOVED FOR

4. NEW ROOFING, SEE DETAILS & SPEC 07 5216

DRAWINGS (E SERIES).

DRAWINGS (TY SERIES).

DRAWINGS (TA SERIES).

TAGGED NOTES Fxx

DRAWINGS, SEE TT SERIES.

CONSTRUCTION SCHEDULED TO REMAIN IN OR NEAR AREAS OF

10. REFER TO A-120 SERIES FOR REFLECTED CEILING PLANS

TYPES AND SECTIONAL WALL DETAILS

7. REFER TO SHEET A-006 FOR FINISH SCHEDULE

8. REFER TO SHEET A-007 FOR DOOR SCHEDULE

■ | ■ | ■ SCOPE LIMIT LINE

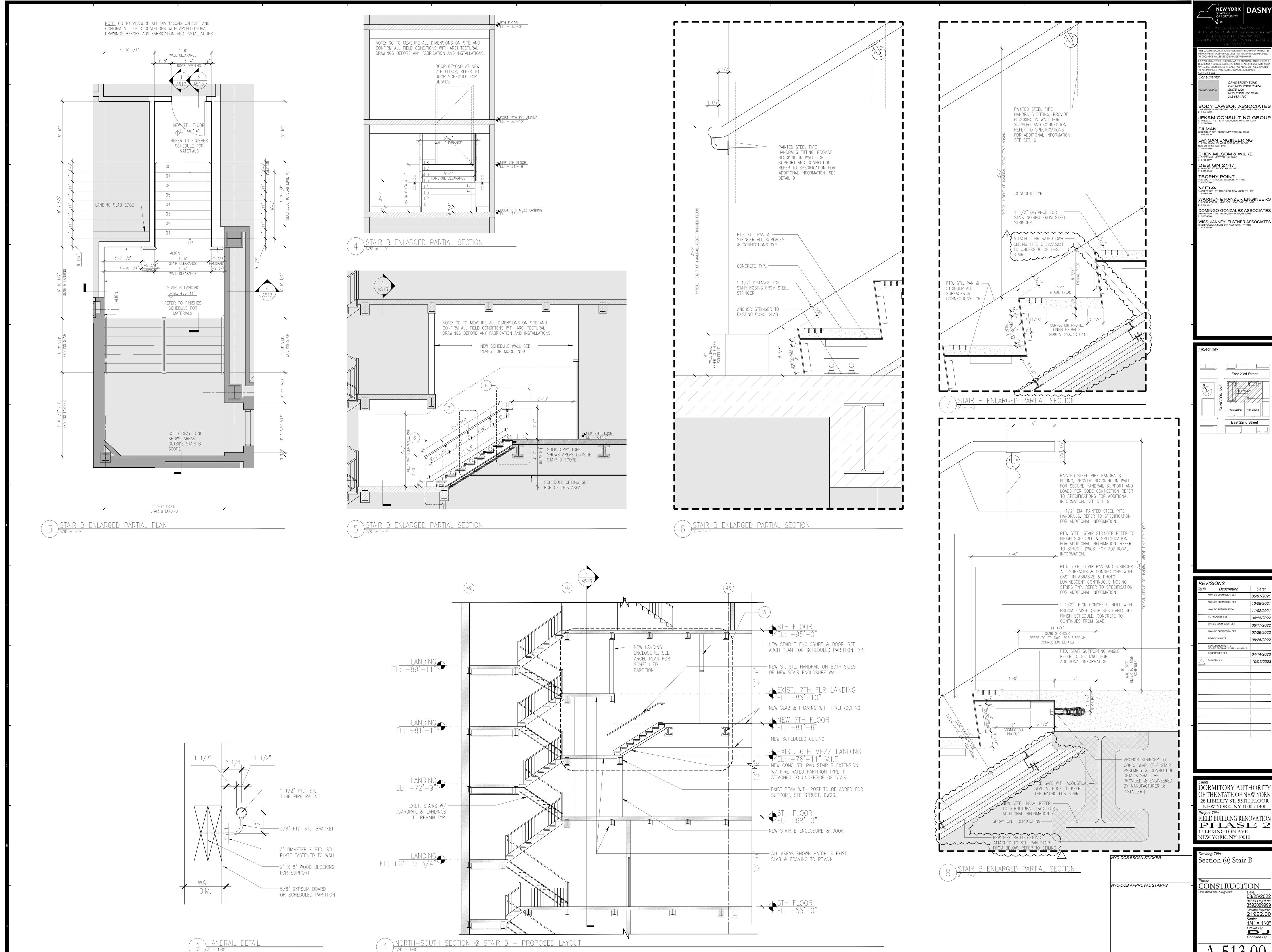
7. MASONRY INFILL, SEE A-501

NEW FLOORING AND FINISH

AREA NOT IN SCOPE --- ADD ALTERNATE SCOPE LIMIT LINE

(SEE ADD ALT DESCRIPTION ON G-004 AND KEY PLANS FOR BASE & ALT SCOPES ON G-006 & 007) EXISTING WALL NEW WALL CONSTRUCTION

EXISTING DOOR NEW DOOR



NEW YORK STATE OF OPPORTUNITY

vay. Alterations must have the seal affixed along with a descripti the alterations, date and architect's/engineer's signature.

DAVIS BRODY BOND ONE NEW YORK PLAZA, SUITE 4200 NEW YORK, NY 10004

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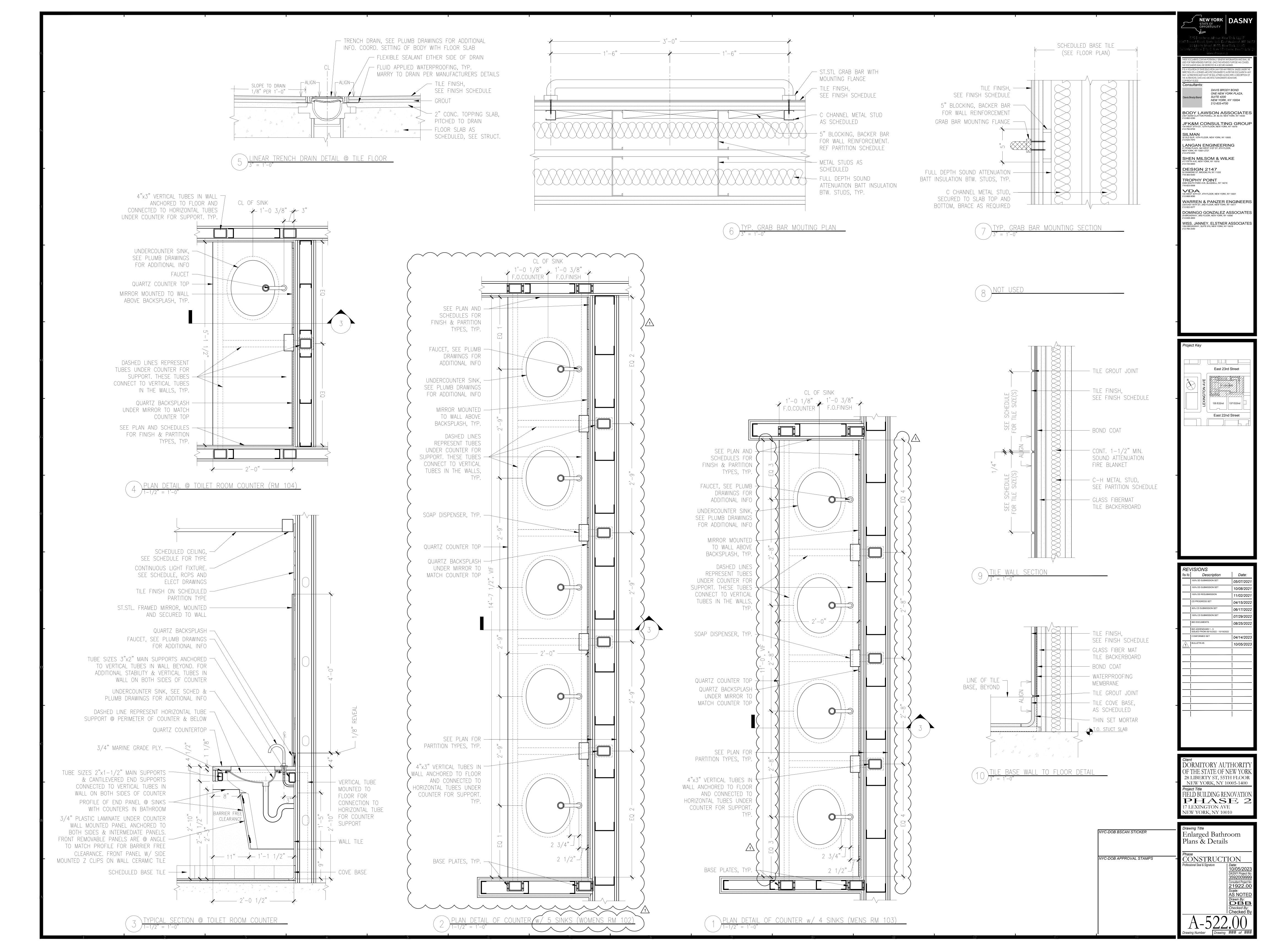
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Rev No Description 04/15/2022 06/17/2022 07/29/2022 08/25/2022 BID ADDENDUMS 1 - 5 ISSUED FROM 09/15/2022 - 10/19/2022 04/14/2023

OF THE STATE OF NEW YORK 28 LIBERTY ST, 55TH FLOOR NEW YORK, NY 10005-1400 Project Title
FIELD BUILDING RENOVATION

Section @ Stair B

Phase
CONSTRUCTION
Professional Seal & Signature
Date:
08/25/



DRAWINGLIST:		SCHEDULES / LEGENDS:
Sheet Number TA-000	Sheet List Table  Sheet Title  AUDIOVISUAL TITLE SHEET	REFER TO EQUIPMENT
TA-001 TA-101 TA-301A TA-301B	AUDIOVISUAL SCHEDULES  AUDIOVISUAL OVERALL PLAN - 1ST FLOOR  AUDIOVISUAL ENLARGED PLANS - 1ST FLOOR  AUDIOVISUAL ENLARGED PLANS - FIRST FLOOR	SCHEDULE    XXXX
TA-400 TA-600 TA-700 TA-701	AUDIOVISUAL RISER DIAGRAM  AUDIOVISUAL SYSTEM DIAGRAMS  AUDIOVISUAL DETAILS  AUDIOVISUAL DETAILS	SCHEDULE SCHEDULE REFER TO INFRASTRUCTURE SCHEDULE
TA-700	AUDIOVISUAL DETAILS	REFER TO INFRASTRUCTURE

# REFER TO EQUIPMENT SCHEDULE TO DATA -- XX YYY ZZ -- REFER TO POWER HEDULE SCHEDULE REFER TO INFRASTRUCTURE SCHEDULE

# **ROOM READY:**

PLEASE FIND THE BELOW GUIDE TO REVIEW THE CONDITION OF THE ROOMS SCHEDULED TO RECEIVE AV EQUIPMENT PRIOR TO DELIVERY AND INSTALLATION OF THE MULTIMEDIA SYSTEMS. THE MULTIMEDIA SYSTEMS ARE DELIVERED AFTER THE ROOMS ARE 'READY' TO ENSURE A PROPER AND SECURE INSTALLATION OF THE MULTIMEDIA EQUIPMENT.

1. ALL CONSTRUCTION IN THE ROOM IS COMPLETE, INCLUDING: A. ALL ASSOCIATED ROOMS ARE FREE OF DEBRIS AND IS CLEAN

B. ALL WALLS ARE COMPLETE WITH ANY BLOCKING, FABRIC WALL COVERINGS OR PAINT AS REQUIRED C. CEILINGS ARE COMPLETE AND CLOSED

D. FLOOR FINISHES/CARPET IS INSTALLED E. ALL DOORS ARE INSTALLED AND KEYS/LOCKS PROVIDED

F. ALL LIGHTING IS INSTALLED AND PROGRAMMED, IF CONTROLLABLE (SUCH AS LUTRON)

2. ALL ELECTRICAL WORK RELATED TO THE AV SYSTEM IS COMPLETE, INCLUDING: A. INSTALLATION OF ALL CONDUIT, FLOOR BOXES, PULL BOXES, WIRE WAYS, ETC. B. INSTALLATION OF ALL 120V CIRCUITS IS COMPLETE

C. INSTALLATION OF ALL TABLE AND FURNITURE RELATED POWER AND PULL BOXES ARE COMPLETE

3. ALL WINDOW TREATMENTS ARE INSTALLED AND PROGRAMMED, IF CONTROLLABLE (SOMFY OR EQUAL)

4. ALL PHONE, BRI, LAN CONNECTIONS ARE LIVE AND CHANNEL TESTED A. ALL CABLES AND BOXES MUST BE LABELED AND MATCH MULTIMEDIA TELECOM

B. ALL LAN CONNECTIONS MUST BE FLUKED AND CONFIGURED PER THE MULTIMEDIA TELECOM SHEET

NOTE: PROJECT SPECIFIC 'ROOM READY' IS A MINIMUM OF 4-6 WEEKS PRIOR TO EXPECTED SYSTEM OPERATION DATES.

# **SCOPE OF WORK BETWEEN TRADES:**

SCOPE OF WORK	PROVIDE	FURNISH	INSTALL
IN-WALL BLOCKING SUPPORT FOR AV MOUNTS		GC	GC
MOTORIZED PROJECTION SCREENS		GC	GC
WALL AND CEILING SPEAKER CUTOUTS (	0		
FURNITURE CUTOUTS FOR AV EQUIPMENT (UNLESS	. 0	)	
PROVIDED BY FURNITURE PROVIDER)	0	)	
		)	
KINDORF AND/OR BLACK IRON AS REQUIRED FOR CEILING MOUNTED AV DEVICES		GC	GC
CABLE CONTAINMENT INCLUDING:			
CONDUIT WITH MEASURED PULLSTRINGS		GC	GC
CABLETRAY, LADDERTRAY, AND WIREWAYS		GC	GC
FLOORBOXES		GC	GC
JUNCTION BOXES, PULL BOXES, AND BACKBOXES		GC	GC
POWER OUTLETS		GC	GC
DEDICATED DISTRIBUTION PANELS, LOAD CENTERS, AND POWER ISOLATION TRANSFORMERS	$\wedge$	GC	GC
AV CABLING (LOW VOLTAGE)		<b>)</b> 0	O
AV TERMINATIONS		<b>&gt;</b> 0	0
CUSTOM ENGRAVED AV COVER PLATES		0	0
J-HOOKS AND OTHER SUPPORTS REQUIRED FOR OPEN-RUN AV CABLING		GC	GC
AV DEVICE WALL MOUNTS	. }	Ŏ	Ŏ
AV DEVICES (AS DESCRIBED IN THE AV DRAWINGS AND SPECIFICATION 27 41 16)**		0	0
VOICE/DATA NETWORK CABLING (FIBER AND TWISTED PAIR)		GC	GC
VOICE/DATA COVER PLATES		GC	GC
CATV CABLING		GC	GC
LIGHTING & SHADE CONTROL INTERFACE		GC	GC

REFER TO AV DETAIL SHEETS FOR ADDITIONAL SCOPE DELINEATION AND INFORMATION.

REFER TO SPECIFICATION 27 41 16 - INTEGRATED AUDIOVISUAL SYSTEMS FOR LIST OF AUDIOVISUAL EQUIPMENT TO BE PROVIDED BY DASNY AND INSTALLED BY THE GC

**DEFINITION OF TERMS** 

FURNISH - TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS, OR ENCUMBRANCES.

INSTALL - TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE WORK.

**PROVIDE - TO FURNISH AND INSTALL.** 

**LEGEND FOR SCOPE OF WORK BETWEEN TRADES:** GC = GENERAL CONTRACTOR
O = DASNY STATE CONTRACT 

NO.	NUMBER
OD	OUTSIDE DIAMETER
OFE	OWNER FURNISHED EQUIPMENT
OSP	OUTSIDE PLANT
PA	PUBLIC ADDRESS
PB	PULLBOX
PP	PATCH PANEL
PR	PAIR
PBX	PRIVATE BRANCH EXCHANGE
PNL	PANEL
POE	POWER OVER ETHERNET
PRJ	PROJECTOR
PTZ	PAN/TILT/ZOOM
RCK	AUDIOVISUAL EQUIPMENT RACK
RM	ROOM
RW	RACEWAY

**SCREW COVER BOX** 

**SCREEN SWITCH** 

**ABBREVIATIONS:** 

**AMPERES** 

ABOVE COUNTER AT FINISHED CEILING

**ABOVE SLAB** 

**AUDIOVISUAL** 

CONDUIT

CAMERA

**CEILING BOX** 

**COAXIAL CABLE** 

**CONSOLIDATION POINT** 

**DIGITAL VIDEO RECORDER** 

FOILED/UNSHIELDED TWISTED PAIR

INTERMEDIATE DISTRIBUTION FRAME

MECHANICAL EQUIPMENT ROOM

MAIN TELECOMMUNICATIONS EQUIPMENT ROOM

FIRE ALARM CONTROL PANEL

FLAT PANEL DISPLAY

**CENTER LINE CONDUCTOR** 

**CONDUCTOR** 

**EMERGENCY** 

**EXISTING** 

FIRE ALARM

**FLOOR BOX** FIBER OPTIC

GROUND

LECTERN

**LOW VOLTAGE** MAXIMUM

MICROPHONE

**MANHOLE** 

MULTIMODE

MOUNTED

**NEUTRAL** 

MINIMUM

MIN

MTD

HERTZ

**HUNG CEILING** 

**INSIDE DIAMETER** 

**LOCAL AREA NETWORK** 

MAIN CROSS CONNECT

NORMALLY CLOSED

**NETWORK INTERFACE DEVICE** 

NOT IN CONTRACT

**NOT TO SCALE** 

NORMALLY OPEN

MAIN DISTRIBUTION FRAME

**EMPTY CONDUIT** 

CEILING

CB

COAX

**ABOVE FINISHED FLOOR** 

**ABOVE TABLE SURFACE** 

**AUDIOVISUAL FLAT PANEL** 

**TIA/EIA CATEGORY 3 RATED** 

**TIA/EIA CATEGORY 5E RATED** 

**TIA/EIA CATEGORY 6A RATED TIA/EIA CATEGORY 6E RATED** 

**CLOSED CIRCUIT TELEVISION** 

**AMERICAN WIRE GAGE** 

ABOVE FINISHED PLATFORM OR RASIED FLOOR

**ELECTRICAL METALLIC TUBING (W/ PULL STRING)** 

**SPEAKER BACK BOX** SINGLE MODE SPEAKER STRAND SHIELDED TWISTED PAIR TO BE DETERMINED **TEMPORARY** TELECOMMUNICATIONS GROUND BAR TELECOMMUNICATIONS ROOM

TAMPER SWITCH TELECOMMUNICATIONS SERVICE ENTRANCE ROOM **TELEVISION TYPICAL UNLESS OTHERWISE NOTED** 

UNTERRUPTIBLE POWER SUPPLY UNSHIELDED TWISTED PAIR **VOLT/AMPERS VERIFY IN FIELD VOLTMETER VOICE OVER INTERNET PROTOCOL VAPOR PROOF** 

WATTS **WIDE AREA NETWORK WIRELESS ACCESS POINT WIRE MANAGEMEI** WATERPROOF WORKSTATION

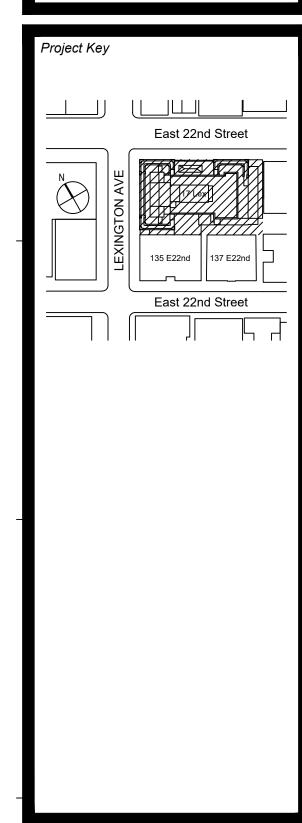
**WATER TIGHT** 

TRANSFORMER

**WIREWAY** 

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NEW YORK DASNY



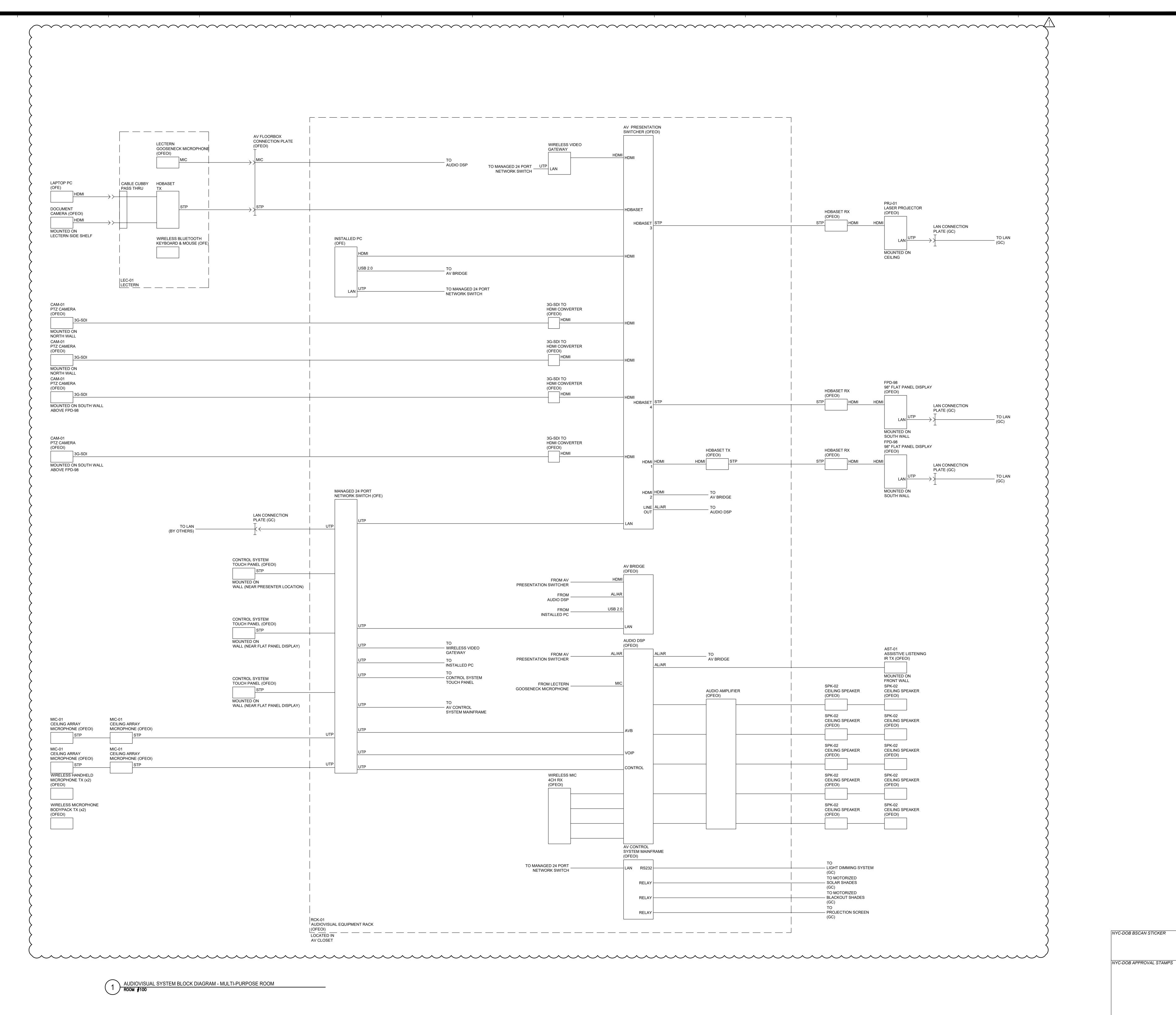
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OF THE STATE OF NEW YORK 28 LIBERTY, 55TH FLOOR NEW YORK, NY 10005-1400 FIELD BUILDING RENOVATIO PHASE 2 17 LEXINGTON AVE NEW YORK, NY 10010

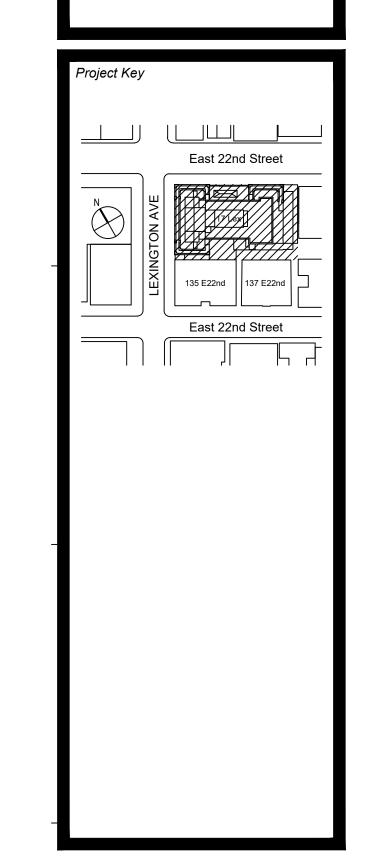
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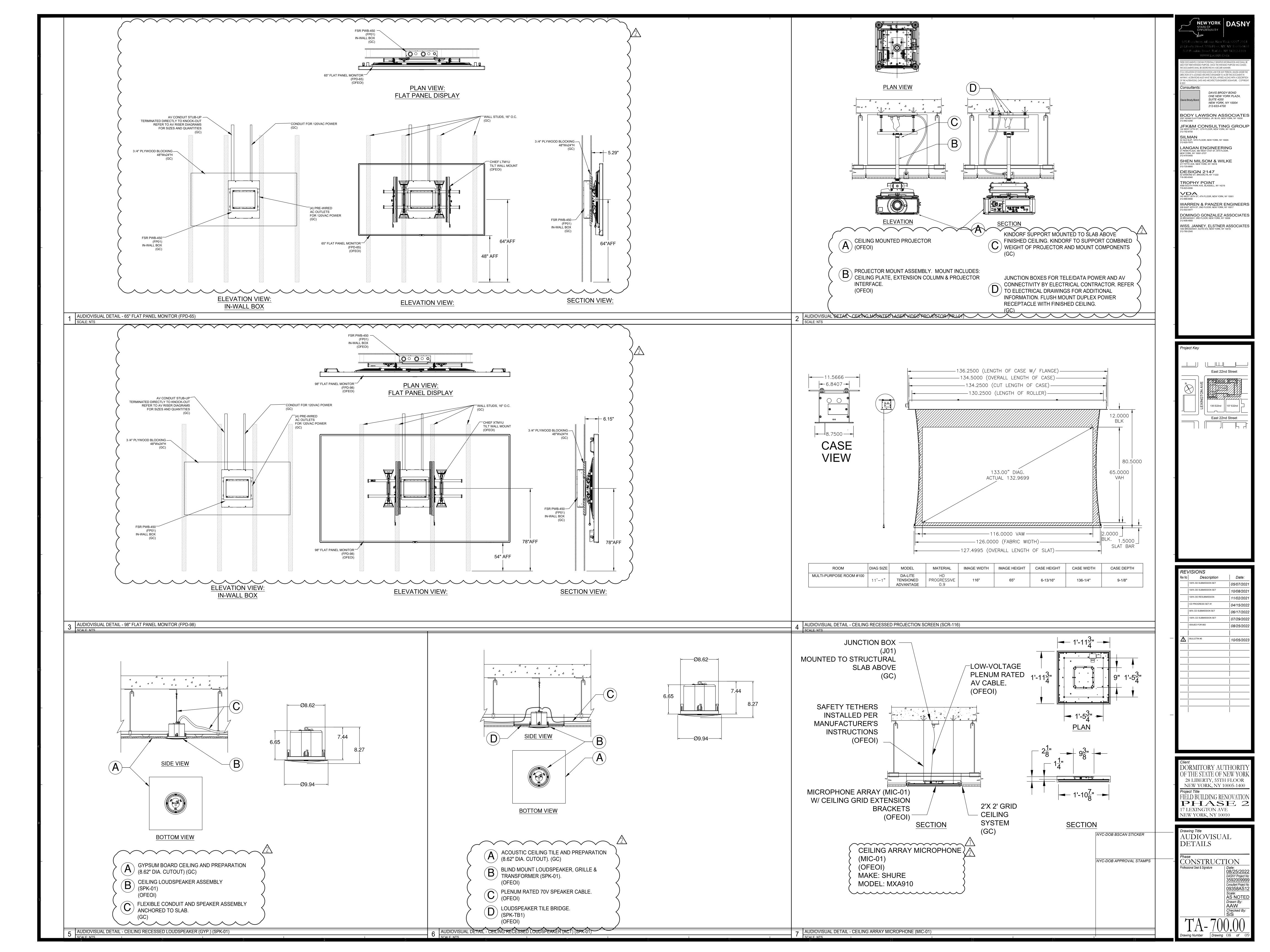


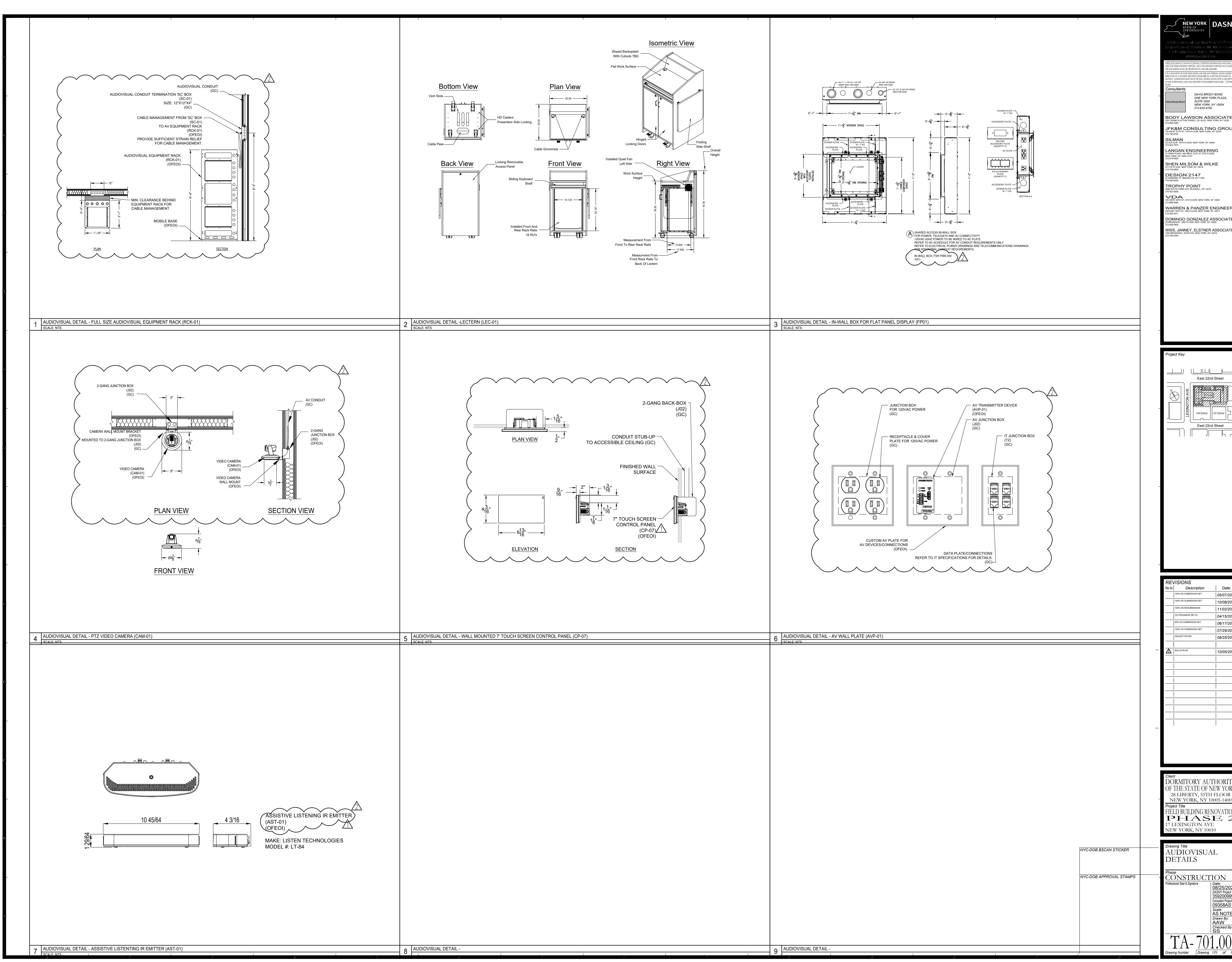
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NYC-DOB BSCAN STICKER

AUDIOVISUAL SYSTEM DIAGRAM 3592009999 Professional Seal & Signature





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