

**STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL**



**Invitation for Bid (“IFB”) # 17-009
Audio Visual (AV) Systems**

Invitation for Bid Number: 17-009	Issued: November 22, 2017
Project Address: 28 Liberty Street, New York, NY 10005	
Bid Description: Audio Visual Systems	
Tentative Action/Date: Bidder(s) will be required to follow the timeline stated below. The Office of the Attorney General (OAG) reserves the right to modify the schedule at any time.	
Contract Period	TBD
Mandatory Site Visit Pre-registration*	November 28, 2017 by 12:00 PM EST
*FAILURE TO REGISTER AND ATTEND THE MANDATORY SITE VISIT WILL PRECLUDE BIDDERS FROM SUBMITTING A QUOTE.	
Mandatory Site Visit	November 29, 2017 at 1:00 PM EST
Submission of Questions	December 4, 2017 by 5:00 PM EST
Issuance of Answers	December 8, 2017
IFB Due Date	December 14, 2017 by 5:00 PM EST
Interview(s)	December 18, 2017 and December 19, 2017
Anticipated Issuance of Tentative Award	December 20, 2017
Office of the Attorney General Occupancy	April 1, 2018
In compliance with Procurement Lobbying Law, contacting anyone other than designated herein may result in rejection of Proposal. Primary Designated Contact: Karie E. King Contract Management Specialist Budget and Fiscal Management Bureau Office of the New York Attorney General State Capitol Albany, New York 12224-0341 Telephone: (518) 776-2128 E-Mail: purchase@ag.ny.gov	In the event the Primary designated contact is not available, the alternate designated contact is: Pamela A. Harrington Contract Management Specialist 2 Budget and Fiscal Management Bureau Office of the New York Attorney General State Capitol Albany, New York 12224-0341 Telephone: (518) 776-2143 E-Mail: purchase@ag.ny.gov

General Information

This is an Invitation for Bids (IFB) issued by the NYS Office of the Attorney General (hereinafter referred to as “OAG”) seeking bids from experienced and qualified vendors to provide audiovisual equipment/systems and related control systems & programming. The OAG is tax exempt. This project is a Union, prevailing wage project. Communications Workers of America (CWA) labor is acceptable. There will not be a lockable storage room on site for equipment or supplies. A performance bid is not required. All deliveries require an appointment after 6 PM EST. Questions regarding this announcement shall be directed to the person on the cover page of this IFB via e-mail only and shall adhere to the above deadline. Verbal questions will NOT be accepted. Bids must be received by the OAG by the due date/time. Late responses will not be considered. To assist bidders in preparing quotes in response to this solicitation, a Mandatory Site Visit will held at 1:00 p.m. (EST) on Wednesday, November 29, 2017 at 28 Liberty Street, New York, NY 10005. For security and fairness reasons, bidders intending on attending the Mandatory Site Visit must preregister. Preregister by submitting an e-mail to purchase@ag.ny.gov with the subject line of “Site Visit Attendees for IFB# 17-009/[insert Vendor Name]” and a body to include your company’s name and the name, title, telephone number and e-mail address of a maximum of two representative(s) who will be attending. The OAG requires bidders to submit written questions after the conclusion of the mandatory site visit as instructed in section 2.1.

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INTRODUCTION

1.1 Bid Overview

The New York State Office of the Attorney General (OAG) is seeking an experienced and qualified vendor to provide audiovisual equipment/systems and related control systems & programming at its New York City Office location.

This bid solicitation outlines the terms and conditions, and all applicable information required for submitting a bid. Bidders should pay strict attention to the submission date and time on the cover page of this document to prevent disqualification.

2. BID QUESTIONS AND BID SUBMISSION

2.1 IFB Questions/Inquiries and/or Clarifications

All questions/inquiries and/or clarifications concerning this bid solicitation shall be addressed to the Office of the Attorney General (OAG) designated contact. All questions should be submitted by email to purchase@ag.ny.gov with the subject line: "IFB #17-009 Audio Visual Systems – Q&A [Insert vendor name]". Cite the particular bid section and paragraph number the question relates to. Prospective Bidders should note that all clarifications and exceptions, including those relating to the terms and conditions of the contract, are to be resolved prior to the submission of a bid.

Questions/inquiries and/or requests for clarification **are only accepted via e-mail**. Official answers to questions will be provided via addendum and posted to the OAG website: <https://ag.ny.gov/budget-and-fiscal-management-bureau-procurement>. Deadline for submission of questions will be as stated on the cover page of this document.

2.2 Bid Format and Content

In order for the State to evaluate bids fairly and completely, bidders must follow the format set forth herein and in the attached Appendix Three (3) titled "OAG AV Specifications" and must provide all of the information requested. All items identified in the specifications must be addressed as concisely as possible in order for a bid to be considered complete. Failure to conform to the stated requirements may necessitate rejection of the bid. All materials shall be attached, clearly labeled and sent via email, in a manner to allow for ease of separation in evaluating proposals.

⇒ **Proposal Response Cover Form.** The form must be completed in its entirety and a bidder representative authorized to make contractual obligations must sign the Proposal Response Cover Form. By signing the Proposal Response Cover Form, the **bidder understands and agrees to all the terms and conditions contained in this IFB and will comply with all the provisions of this IFB and appendices attached herein.**

Note: The OAG retains the right to request any additional information pertaining to the Contractor's ability, qualifications, and procedures used to accomplish all work under the resulting contract, as it deems necessary to ensure safe and satisfactory work.

Bidder must supply copies of all documents listed below for their bid submission to be considered complete.

- 2.2.1 Bidders must complete and sign the attached Appendix One (1) titled "Proposal Response Cover Form"
- 2.2.2 Bidders must provide evidence of their qualifications to perform the specified work in the format set forth in section 1.4 of the attached Appendix Three (3) titled "OAG AV Specifications".
- 2.2.3 Bidders must submit pricing using the attached Appendix Two (2) titled "AV Equipment Bid Sheet".
- 2.2.4 Procurement Lobbying Form
- 2.2.5 NYS Vendor Responsibility Questionnaire for Profit Business Entity, may be electronically filed
- 2.2.6 ST-220-CA Contractor Certification to Covered Agency
- 2.2.7 NYS Office of the State Comptroller Substitute W-9
- 2.2.8 Acceptable Proof of NYS Worker's Compensation and Disability Coverage (Refer to section 4.11 – Workers' Compensation Insurance and Disability Requirements for acceptable forms)

2.3 Bid Submission

Bids shall be prepared on forms furnished by OAG; **shall be manually signed by an authorized official of the company** submitting the bid and shall be submitted in an electronic version. Please submit all the required documents adhering to instructions listed in Section 2.2 – Bid Format and Content. Failure to complete all information on the proposal or attach all required documents by the submission deadline may result in disqualification. All bids shall be emailed to: purchase@ag.ny.gov, with the Subject Line: "Proposal for IFB #17-009 for Audio Visual Systems – [Insert Vendor Name]".

3. ADMINISTRATIVE INFORMATION

3.1 Method of Award

The OAG shall make award(s) by lowest Grand Total Bid to the most responsible and responsive Bidder(s), meeting all terms and conditions as outlined in this IFB.

Award of a contract, if awarded, will be made to bidders who (a) submit a responsive bid; (b) are a responsible bidder; and (c) are the lowest AV Project Grand Total bid. The Contractor shall not perform such service until receiving an official Purchase Order from the OAG Budget and Fiscal Management Purchasing Bureau.

A response to the solicitation is an offer to contract with the OAG based on the terms and conditions contained therein. Bids do not become contracts until they are accepted by the OAG through issuance of a duly executed contract signed by both parties, and the New York State Office of the Attorney General Contract Approval Unit and the New York State Office of the State Comptroller. The general terms and conditions in this solicitation, the applicable requirements and provisions of the IFB, appendices and any memorandums and/or addendums by the OAG shall be included in any resulting contract.

3.2 Bidder Debriefing

A bidder shall be accorded fair and equal treatment with respect to its opportunity for debriefing. Prior to contract award, the OAG shall, upon request, provide a debriefing which would be limited to review of that bidder's proposal or bid. After contract award, the OAG shall, upon request, provide a debriefing to any unsuccessful bidder that responded to the solicitation, regarding the reason that the proposal or bid submitted by such bidder was not selected for a contract award. The post-award debriefing should be requested in writing within 30 days of notification of the contract award.

3.3 Invoicing and Payment

Payments are made against the contract, encumbrance documents or other written orders.

All invoices for payment shall be submitted to the Office of the Attorney General, Accounts Payable Unit, within thirty (30) days after the end of the month in which the services were performed. The invoice shall contain the following:

- (1) Payee's complete name, telephone, email address, address, including zip code*;
- (2) Statewide Financial System vendor identification number;
- (3) Contract or Purchase Order number assigned by OAG;
- (4) Itemized breakdown of the services rendered including name, titles, hourly rate, # of hours worked, dates, etc. and/or list of commodities provided including sku, item or part #'s, etc..

*Information should agree with Remit to information in the Statewide Financial System.

Invoices can be submitted by mail or email:

NYS Office of the Attorney General,
Budget & Fiscal Management Bureau - Payments Unit
The Capitol
Albany, NY 12224-0341

E-Mail: payments@ag.ny.gov.

All records regarding service and billings to the OAG under this contract shall be retained as per Appendix A, Clause #10 – Records and may be subject to audit by appropriate State officials upon written notice.

3.4 Electronic Payment

Contractor shall provide complete and accurate billing invoices in order to receive payment. Billing invoices submitted must contain all information and supporting documentation required by the contract, the agency, and OSC. Payment for invoices submitted by the contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the Commissioner, in the Commissioner's sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary State procedures and practices. The Contractor shall comply with the State Comptroller's procedures to authorize electronic payments. Authorization forms are available at OSC's website at <http://osc.state.ny.us/vendors/epayments.htm>, by e-mail at ePayments@osc.state.ny.us, or by phone at (855) 233-8363. Contractor acknowledges that it will not receive payment on any invoices submitted under this Contract if it does not comply with OSC's electronic payment procedures, except where the Commissioner has expressly authorized payment by paper check as set forth above.

Please note that in conjunction with New York State's implementation of the statewide financial system, OSC requires all vendors doing business with New York State agencies to complete a Substitute W-9 form. Vendors registering for electronic payment can complete the W-9 form when they register. Vendors already registered for electronic payment are requested to go to the above website and complete the Substitute W-9 form and submit following the instructions provided.

3.5 Hours of Operation and Legal Holidays

The Contractor shall be available to provide services during normal working hours, 8:00 am to 5:00 pm, Monday through Friday, except holidays.

The following are a list of State holidays that need to be considered during the course of providing services under any resulting contract:

- | | | | |
|--------------------------|------------------------------|--------------------------|------------------------|
| <input type="checkbox"/> | New Year's Day | <input type="checkbox"/> | Labor Day |
| <input type="checkbox"/> | Martin Luther King Day | <input type="checkbox"/> | Columbus Day |
| <input type="checkbox"/> | Lincoln's Birthday (Floater) | <input type="checkbox"/> | Election Day (Floater) |
| <input type="checkbox"/> | President's Day | <input type="checkbox"/> | Veteran's Day |
| <input type="checkbox"/> | Memorial Day | <input type="checkbox"/> | Thanksgiving Day |
| <input type="checkbox"/> | Independence Day | <input type="checkbox"/> | Christmas Day |

3.6 Appropriated Funds

The purchase of service or product, which arises from this solicitation, is contingent upon the availability of appropriated funds. The OAG shall have the right to terminate the resulting contract at the end of the current or each succeeding fiscal year if funds are not appropriated by the Legislature and Governor for the next fiscal year that would permit continuation of the resulting contract. If funds are withdrawn or do not become available, The OAG reserves the right to terminate the contract by giving the contractor a thirty (30) day written notice of its intention to terminate without penalty or any further obligations on the part of the OAG or the contractor. Upon termination of the contract, the OAG shall not be responsible for any payment of any service or product received that occurs after the end of the current contract period or the effective date of termination, whichever is the earlier to occur. The OAG's fiscal year begins on April 1st and ends on March 31st.

4. CONTRACT CLAUSES AND REQUIREMENTS

4.1 Appendix A/Order of Precedence

Appendix A — Standard Clauses for New York State Contracts, dated January 2014 attached hereto, is hereby expressly made a part of this solicitation document as fully as if set forth at length herein.

The agreement resulting from a successful award will include the following documents. Conflicts between these documents will be resolved in the following descending order of precedence:

- 4.1.1 Appendix A (Standard Clauses for NYS Contracts)
- 4.1.2 Contract
- 4.1.3 OAG IFB 17-009, Appendix Three (3) OAG AV Specifications, Appendix B and any other addendum
- 4.1.4 Selected Contractor(s) Bid
- 4.1.5 Unincorporated Appendices

4.2 Appendices

The Bidder's attention is directed to the appendices documents attached hereto, and hereby incorporated by reference and made part hereto as fully as if it were set forth at length herein. They are a part of the contract and the Bidder is responsible for adhering to all requirements of all attachment and appendices.

4.3 Procurement Lobbying Requirements

State Finance Law §§139-j and 139-k imposes certain restrictions on communications between the OAG and the bidder during the procurement process. The bidder is restricted from making contacts from the date of bid advertisement in the NYS Contract Reporter through final approval of the contract award by the Office of the State Comptroller, with anyone other than designated OAG staff; certain exceptions to this restriction are set forth in State Finance Law §139-j(3)(a). OAG employees are also required to obtain certain information when contacted during the "restricted period" and to make a determination of responsibility of the bidder pursuant to these two statutes. Certain findings of non-responsibility can result in rejection for contract award, and in the event of two such findings within a four-year period, the bidder is debarred from obtaining State contracts. Further information about these requirements can be found on the OGS website: <http://www.ogs.ny.gov/aboutOgs/regulations/defaultAdvisoryCouncil.html>

4.4 Procurement Rights

State of New York reserves the right to:

- 4.4.1 Prior to the bid opening, amend the IFB/RFP specifications to correct errors or oversights, or to supply additional information, as it becomes available.
- 4.4.2 Reject any or all proposals received in response to this solicitation.

- 4.4.3 Disqualify a Proposer from receiving the award if the Proposer, or anyone in the Proposer's employ, has previously failed to perform satisfactorily in connection with public bidding or contracts.
- 4.4.4 Correct Proposers' mathematical errors and waive or modify other minor irregularities in proposals received, after prior notification to the Proposer.
- 4.4.5 Negotiate with Proposers responding to this solicitation within the solicitation requirement to serve the best interest of the State.
- 4.4.6 Not make an award from this solicitation.
- 4.4.7 Make an award under this solicitation in whole or in part.
- 4.4.8 Make multiple contract awards pursuant to the solicitation.
- 4.4.9 Seek clarifications of proposals.
- 4.4.10 OAG has the right to all interpretation issues with respect to the content/language and meaning thereof the IFB and contract.

4.5 Dispute Resolution

It is the policy of the Office of the Attorney General, Budget & Fiscal Management Bureau, to provide vendors with an opportunity to administratively resolve disputes, complaints or inquiries related to bid solicitations, contract awards and contract administration. The Budget & Fiscal Management Bureau encourages vendors to seek resolution of disputes informally, through consultation with agency staff, prior to commencing a formal dispute process. All such matters will be accorded impartial and timely consideration.

4.6 Procurement Lobbying Termination

As stated in Section 4.9 – NYS Vendor Responsibility Questionnaire For-Profit Business Entity and/or “Termination – for Cause” in Appendix B, General Specifications and/or New York State Finance Law Section 139-k, the Office of the Attorney General reserves the right to terminate a contract by providing ten (10) days written notification to the Contractor, for cause in the event of determination made after an award with respect to vendor non-responsibility, or in the event of determination that certification filed in accordance with State Finance Law Section 139-k was intentionally false or intentionally incomplete.

4.7 Subcontracting

Contractor may subcontract to subcontractors selected by Contractor. A subcontractor shall be defined as any firm or person who is not a full time employee of the Contractor, engaged or assigned to perform work under the Contract. All agreements between the Contractor and its subcontractors shall be by bona fide written contract. A subcontractor cannot subcontract work under the resulting contract. Any costs associated with subcontracting are the obligation of the Awarded Contractor.

Contractor shall be fully responsible to OAG for the acts and omissions in the performance of services under the Contract of the subcontractor and/or persons either directly or indirectly employed by it or by the subcontractors, as it is for the acts and omissions in the performance of services under the Contract or persons directly employed by the Contractor. Contractor shall not in any way be relieved of any contractual or financial responsibility under the Contract by its agreement with any subcontractor or by an OAG approval of such an agreement with a subcontractor.

The State reserves the right to reject any proposed subcontractor for bona fide business reasons, which may include, but are not limited to: that the proposed subcontractor is on the Department of Labor's debarred list; the State determines that the company is not qualified; unsatisfactory contract performance or service has been previously provided.

4.8 Indemnification

Contractor shall be fully liable for the actions of its agents, employees, partners or Subcontractors and shall fully indemnify and save harmless the Authorized Users from suits, actions, damages and costs of every name and description relating to personal injury and damage to real or personal tangible property caused by any intentional act or negligence of Contractor, its agents, employees, partners or Subcontractors, without limitation; provided, however, that the Contractor shall not indemnify for that portion of any claim, loss or damage arising hereunder due to the negligent act or failure to act of the Authorized Users.

4.9 New York State Vendor Responsibility Questionnaire For-Profit Business Entity (hereinafter the “Questionnaire”)

The OAG conducts a review of prospective contractors (“Bidders”) to provide reasonable assurances that the Bidder is responsive and responsible. A Questionnaire is used for non-construction contracts and is designed to provide information to assess a Bidder's responsibility to conduct business in New York based upon financial and organizational capacity, legal authority, business integrity, and past performance history. **By submitting a bid, Bidder agrees to fully and accurately complete the “Questionnaire.”** The Bidder acknowledges that the State's execution of the Contract

will be contingent upon the State's determination that the Bidder is responsible, and that the State will be relying upon the Bidder's responses to the Questionnaire when making its responsibility determination.

OAG recommends each Bidder file the required Questionnaire online via the New York State VendRep System.

To enroll in and use the VendRep System, please refer to the VendRep System Instructions and User Support for Vendors available at the Office of the State Comptroller's (OSC) website, <http://www.osc.state.ny.us/vendors/index.htm> or to enroll, go directly to the VendRep System online at <https://portal.osc.state.ny.us/Enrollment/register?1>.

OSC provides direct support for the VendRep System through user assistance, documents, online help, and a help desk. The OSC Help Desk contact information is located at <http://www.osc.state.ny.us/portal/contactbuss.htm>. Bidders opting to complete the paper questionnaire can access this form and associated definitions via the OSC website at: http://www.osc.state.ny.us/vendrep/forms_vendor.htm.

In order to assist the State in determining the responsibility of the Bidder, the Bidder should complete and certify (or recertify) the Questionnaire no more than six (6) months prior to the bid opening date. A Bidder's Questionnaire cannot be viewed by the OAG until the Bidder has certified the Questionnaire. It is recommended that all Bidders become familiar with all of the requirements of the Questionnaire in advance of the bid opening to provide sufficient time to complete the Questionnaire.

The Bidder agrees that if it is found by the State that the Bidder's responses to the Questionnaire were intentionally false or intentionally incomplete, on such finding, the OAG may terminate the Contract. In no case shall such termination of the Contract by the State be deemed a breach thereof, nor shall the State be liable for any damages for lost profits or otherwise, which may be sustained by the Contractor as a result of such termination.

4.10 Tax Law § 5-A (Amended April 26, 2006):

Tax Law § 5-a, as amended on April 26, 2006, requires certain contractors who are awarded state contracts for commodities and/or services valued at more than \$100,000 (over the full term of the contract, excluding renewals) to certify to the Department of Taxation and Finance (DTF) they are registered to collect New York State (NYS) and local sales and compensating use taxes. The law applies to contracts where the total amount of the contractor's sales delivered into NYS exceed \$300,000 for the four quarterly periods immediately preceding the quarterly period when the certification is made; and with respect to any affiliates and subcontractors whose sales delivered into NYS also exceed \$300,000 in the same manner as noted above for the contractor.

This law imposes upon certain contractors the obligation to certify whether or not the contractor, its affiliates, and its subcontractors are required to register to collect state sales and compensating use tax and contractors must certify to DTF that each affiliate and subcontractor exceeding such sales threshold is registered with DTF to collect New York State and local sales and compensating use taxes. The law prohibits the State Comptroller, or other approving agency, from approving a contract awarded to a contractor meeting the registration requirements but who is not so registered in accordance with the law.

The OAG reserves the right to terminate the contract in the event it is found that the certification filed by the Contractor in accordance with §5-a of the Tax Law is not timely filed during the term of the Contract or the certification furnished was intentionally false or intentionally incomplete. Upon such finding, the OAG may exercise its termination right by providing written notification to the Contractor.

Vendors may call DTF at (518) 485-2889 for any and all questions relating to Tax Law § 5-a and relating to a company's registration status with DTF. For additional information and frequently asked questions, please refer to the DTF web site: <http://www.tax.ny.gov/pdf/publications/sales/pub223.pdf>

4.11 Workers' Compensation Insurance and Disability Benefit Requirements

Workers' Compensation Law (WCL) §57 & §220 requires the heads of all municipal and state entities to ensure that business applying for permits, licenses or contracts document they have appropriate workers' compensation and disability insurance coverage. These requirements apply to both original contracts and renewals, whether the governmental agency is having the work done or is simply issuing the permit, license or contract. Failure to provide proof of such coverage or a legal exemption will result in rejection of your bid or renewal. Contractor seeking to enter into a contract with the State of New York shall reference the Quick Guide to Workers Compensation and Disability Insurance to determine which forms to provide to the OAG at the time of bid submission or shortly after the bid submission deadline. ALL FORMS, EXCEPT CE-200, SI-12 & DB-155 MUST NAME: The NYS Office of the Attorney General, Budget and Fiscal Management Bureau, State Capitol, Albany, NY 12224 as the Entity Requesting Proof of Coverage (Entity being listed as Certificate Holder).

**STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL**



**Invitation for Bid (“IFB”) # 17-009
Audio Visual (AV) Systems**

APPENDIX 1 - PROPOSAL RESPONSE COVER FORM

Invitation for Bid Number: 17-009		Issued: November 22, 2017	
Bid Description: Audio Visual (AV) Systems			
Complete this form in its entirety using ink or typewriter and return with all other required documents. The bid must be fully and properly executed by an authorized person. Bids must be signed.			
Bidder’s Federal Tax Identification #:		NYS Vendor Identification #:	
Legal Business Name of Company:			
Street		City	
State		County	Zip
The undersigned certifies that they are duly elected and authorized officer of the company and that, as such, are authorized to sign this Invitation for Bids (IFB), on behalf of the company, to obligate the company to comply with all of the terms and conditions placed on this IFB, and in connection with this IFB to make, execute and deliver on behalf of the company all appendices, contract agreements, representations and instruments of every kind. The undersigned certifies that your company has the experience, financial resources, capabilities and licenses (if applicable) to perform the type, magnitude, and quality of work as specified in this IFB. The undersigned certifies that the company shall comply with all relevant federal, state and local laws and rules including but not limited to, New York General Business Law, New York Civil Practice Law and Rules and the New York Business Corporation Law.			
Bidder’s Printed or Typed Name:		Bidder's Signature:	
Title:		Date:	
Phone:	Extension	Email Address:	
Fax:	Extension		
Only E-Mail Bid Submissions Will Be Accepted for this Invitation for Bid			

SECTION 274116 - AUDIOVISUAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes the following:

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

1.2 GENERAL CONDITIONS

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

1.3 THE SPECIFICATION

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

1. The Specification includes, but is not limited to:

- a. This written specification document.
- b. The attached Audiovisual Systems Equipment List
- c. All drawings, as listed in the List of Drawings or indicated on the drawing package cover page.
- d. Additions and/or modifications as detailed in written addenda.
- e. Additions and/or modifications as detailed in drawing additions or reissues.

B. Definition of Terms

1. Within this section of the specification, the following definitions shall apply:
2. The term "Owner" is used to indicate: OAG
3. The term "Architect" is used to indicate: Gensler
4. The term "General Contactor" or "Construction Manager" is the entity responsible for fit out of the interior spaces and coordination of all subcontractors
5. The term "Consultant" is used to indicate: Cerami & Associates
6. The term "Bidder" is used to indicate that entity generating the bid response.
7. The term "Contractor" is used to indicate the successful Bidder to whom the Owner has awarded the contract.
8. The term "Furnish" is used to indicate the responsibility to procure and ship or deliver the item to the job site, freight prepaid, for receipt, staging and installation by others.

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

1.4 BIDDER QUALIFICATIONS

A. Contractor Qualification Requirements: Bidder shall submit evidence of his/her qualifications to perform the work specified. Contractor qualifications shall be the most current information available but not more than one-year-old. Materials shall include:

1. Corporate Profile
2. Location of Corporate Headquarters
3. Number of offices and locations
4. Location of office assigned to this project
5. Corporate History
6. How Many years in this business?
7. Under what former names have your organization operated
8. Date(s) of incorporation
9. State of incorporation
10. Officers names and addresses

B. Litigation Experiences within the Last 5 Years

1. Project Related:

- a. Nature of Litigation
 - b. Plaintiff or Defendant
 - c. Outcome
2. Non-Project Related
 - a. Nature of Litigation
 - b. Plaintiff or Defendant
 - c. Outcome
- C. Number and Type of Full-Time Staff
1. Total number of employees
 2. Number of design staff
 3. Number of installation staff
 4. Number of project management staff
 5. Number of software programming staff
- D. Identify key personnel that will be assigned to this project including:
1. Project Executive
 2. Project Manager
 3. Systems Designer
 4. Crew Chief/Superintendent/Lead Technician
 5. Systems Programmer
 6. Commissioning Agent
 7. Trainer
- E. For each Individual listed above provide a resume that includes:
1. Office Location
 2. Percentage of individual's time that will be allocated to this project
 3. Work History
 4. Previous Project Experience
 5. Length of Employment
 6. Certifications: CTS, CTS-D, CTS-I, RCDD, PMP, Certified Control System Programmer, Certified DSP Programmer, video projection manufacturer specific certification, other.
 7. The contractor's lead installer shall hold a current CTS-I (Certified Technology Specialist – Installation) certification from InfoComm International, and/or a current EST-L2 (Electronic Systems Technician) certification from NSCA. The Contractor shall submit the name of the lead installer and certification expiration dates.

8. Due to the potential complexity of the control system, a manufacturer certified software programmer shall be required to author the programming components of this project. The Contractor shall include in the bid response, the name of the manufacturer certified person or entity that will provide programming for the remote-control system. The resume shall include a listing of years of experience and include a statement of manufacturer authorization, certification type, date of certification and the certificate number.
9. The project will utilize Digital Media Systems from one of several approved manufacturers. The Contractor shall provide documentation listing project team member(s), named in Section 1.4.D above, who will work on the project and who are manufacturer certified for all systems included in these Specifications with active certification. The documentation shall include a listing of years of experience and include a statement of manufacturer authorization, certification type, date of certification and the certificate number.
10. The project will utilize Digital Signage and Video Distribution System products from one of several approved manufacturers. The Contractor shall provide documentation listing project team member(s), named in Section 1.4.E above, who will work on the project and who are manufacturer certified for all systems included in these specifications with active certification. The documentation shall include a listing of years of experience and include a statement of manufacturer authorization, certification type, date of certification and the certificate number.
11. This project will utilize CWA installation labor. The Contractor shall provide documentation indicating if union labor will be provided by the Contractor or a Contractor designated and managed sub-contractor. The Contractor shall indicate the company name, address and contact information for the intended union sub-contractor included in the audiovisual bid.

F. Resources

1. A manufacturers' line card for products in which the Contractor is an authorized Distributor or Dealer. Include date initially authorized.
2. A list of any manufacturers specialized technical certifications or designations held by the Contractor.
3. A list of manufacturers for whom the Contractor is an authorized service center.
4. A list of computer software and/or systems owned by the Contractor, which will be used to communicate, measure, draw, and/or document the project.
5. A list of system test equipment owned and used by the Contractor, including manufacturer, model number and, where applicable, latest software revision.

G. References

1. Include three projects of:
 - a. Similar scope and scale.
 - b. Similar technology applications
 - c. Provide project cost for each
2. Include three project references, including:
 - a. Contact name
 - b. Institution name
 - c. Phone number
 - d. E-mail address

3. List any past projects where Contractor has worked with the Owner, Consultant, Architects, or Construction Manager who are part of this project team.

1.5 SITE CONDITIONS

A. Labor and Physical Access

1. The Bidder shall be responsible for investigating any potential conflicts with site-related or union-related issues regarding use of personnel, scheduling, access to the site, storage of tools and equipment on-site, and other areas of potential conflict. If these issues impact the Bidder's bid response, the impacts on cost and schedule should be clearly noted in the bid response.

B. Equipment Delivery and Storage

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

C. Refuse

1. The Contractor shall keep the site and building free of all debris and clutter, to the satisfaction of the Owner or Construction Manager. On a daily basis, the Contractor shall remove refuse and rubbish related to the specified work from the site and building and shall leave the relevant areas and equipment clean and in an operational state. The Contractor shall be responsible for repairing any damage caused to the site and building by the Contractor's installation activities, at no cost to the Owner.

1.6 SCOPE OF WORK

- A. General: Provide audio visual systems design, engineering, and installation within all phases and spaces of the project, as defined by the related documents. Systems shall include all devices, equipment, installation, programming and commissioning in accordance with requirements of the contract documents and drawings.
- B. The work detailed within the contract documents has been specified to meet certain requirements for performance, appearance, and costs. It shall be the responsibility of the Contractor to implement the guidelines and requirements contained in the contract documents and translate them into a complete design package containing all elements necessary for a complete, operational, and functionally integrated Audio Visual System(s).
- C. The Contractor shall provide complete, turnkey multimedia systems performing all of the services and functions as described herein, together with all other apparatus, cable, materials, labor, tools, transportation, and any other resources necessary to provide a complete and working system.
- D. Specifically, the work shall include, but is not limited to:
 1. Communicating and coordinating with the Owner, Consultant, Architect, and other trades complying with all requirements as defined under this Scope of Work and elsewhere, to fulfill all requirements of this specification.
 2. Generating and submitting Shop Drawings as required for approvals and As-Built drawings as specified herein.

3. Providing all cable and pull strings in conduits for the specified systems.
4. Furnishing and/or installing all equipment as specified.
5. Installing Owner supplied equipment as specified.
6. Take delivery of all Owner supplied components and equipment, excluding Room PCs, at Contractor's staging facility for integration into AV equipment racks.
7. From the initial point of delivery Contractor shall be responsible for storing, integrating and maintaining as part of the system warranty all Owner supplied components.
8. Prior to installation Contractor shall test and verify all functions of Owner supplied components and equipment previously used in existing Owner's facility. Contractor shall provide a summary report of existing Owner supplied equipment and document any defects or service issues that would prevent existing equipment from reuse as part of this work.
9. Coordinate video conference endpoint provisioning with the Owner's network and the Owner's existing video conference bridge system or outsourced video conference bridging service.
10. Furnishing all lifts, ladders, scaffolding or other resources as needed for proper safe installation. Coordinating with other trades as needed.
11. Interconnecting all components, both internal and external to rack cabinets.
12. Providing patch cables for connection of all IP-enabled audiovisual equipment to associated data network outlets, including but not limited to Owner supplied Room computers, production computers, laptop connections, control system processors, codecs, and projectors. This applies to all equipment installed by the Contractor, including Owner-Furnished (OFCI) items. Coordinate patch cable requirements with the greater building-wide structured cabling system.
13. Contractor shall coordinate and secure, from the Owner, the IP configuration parameters such as DHCP, IP addresses, subnet information, VLAN setup & authorization, and the like for use by Ethernet equipped system components. The Contractor shall coordinate the installation and configuration of these devices with the Owner's IT department and/or designated representative.
14. Secure, from the Owner, private IP addresses for use by Ethernet equipped control system processors.
15. Ensuring that all cabling, equipment, and terminations are installed in accordance with accepted industry standards, approved shop drawings, manufacturer's recommendations and as stipulated herein.
16. Verify that all audiovisual equipment rack locations are provided with adequate clearance, ventilation and cable management systems to ensure all equipment is operating within manufacturer published tolerances.
17. Coordinating and providing cable labels as stipulated by the owner and/or specified herein.
18. Providing cable management hardware as required including in areas audiovisual rack cabinets; between pieces of equipment not housed in rack cabinets; and as required to extend cabling from rack cabinets and equipment to the greater facility cabling infrastructure.

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

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

1.7 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Refer to AV Design Drawings as listed on drawing TA-000
- C. Refer to AV Equipment list provided as part of this specification

1.8 RELATED WORK

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

1.9 WORK EXCLUDED

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

1.10 SCHEDULE

A. Project Milestones

- 1. The Contractor shall obtain from the Owner, Architect, Construction Manager or Consultant a project master timeline schedule showing projected dates when the relevant areas will be available to the Contractor for the on-site installation.
- 2. Within 15 days of notification of contract award, the Contractor shall provide a schedule of major project milestones to the Owner, Architect, and Consultant. The schedule shall show the following milestones, but may include others as required for overall site-work coordination:
 - a. Shop Drawings and Submittals.
 - b. Initial Touch Panel layouts
 - c. Completion of AV Equipment IP list for Owner coordination
 - d. Required date for Owner meeting to review digital signage content
 - e. Required date for receipt of Owner furnished digital signage content
 - f. Delivery of materials to the work site for installation by Others.
 - g. Delivery of major system components to the work site.
 - h. Required date for receipt of Owner furnished equipment and PCs
 - i. Required network turn-on date for Audiovisual Connectivity
 - j. 50% completion of work by floor and by floor area.
 - k. 95% completion of work by floor and by floor area.
 - l. Completion of room run sheets (required prior to move-in).
 - m. Final punch list.

- n. Training Sessions.
 - o. Submittal of Final Documentation / As-Builts.
3. If the Contractor feels that he will have any problems with meeting the scheduled project milestone deadlines, he must inform the Owner, Architect, and Consultant at the earliest possible opportunity.

1.11 JOB CONDITIONS

A. Coordination

1. In the interest of a coordinated and professional project, the Contractor shall:
 - a. Coordinate his/her work with that of other trades. The Contractor should anticipate attending project coordination meetings with the Owner, Architect, Construction Manager, Consultant or other trades as required. These meetings shall be separate from weekly construction coordination meetings required by the General Contractor.
 - b. Afford other trades reasonable opportunity for installation work and for storage of materials.
 - c. Staff the job to keep pace with other trades.
 - d. Submit a brief progress report via e-mail to the Consultant, listing the following information in four sections: Schedule, Progress, Work Planned and Issues. The "Schedule" section shall list the status of all project milestones and track impacts to approved milestone dates. The "Progress" section shall list the tasks accomplished since the previous report; this is to include both completed tasks and work-in-progress. The "Work Planned" section shall list the tasks scheduled for the time period extending until the next report; this section should also include both completed tasks and work-in-progress. The "Issues" section shall list any factors that are delaying progress or have the potential to delay progress that involve the Owner, Architect and/or Consultant. The Progress Reports should be concise, utilizing bullet points or other efficient format. The Progress Reports should be submitted at the following intervals:
 - 1). After contract award, while working off-site: every two weeks
 - 2). While working on-site: every week.
 - e. After on-site work has started the Progress Report shall list the status of each room or space with audiovisual equipment and indicate the current status of items:
 - 1). Cable Pull
 - 2). Mount/Speaker/Backbox Installation
 - 3). Room Ready
 - 4). Display Installation
 - 5). Furniture Installation
 - 6). Rack Installation
 - 7). Field Equipment Installation
 - 8). Programming
 - 9). Commissioning
 - 10). Ready for Consultant Testing
 - 11). Punch List Completion

1.12 SITE CONDITIONS

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

that work within the constraints of the space available. The Contractor shall notify the Consultant of any situation where space constraints are a problem, prior to the ordering or purchase of equipment. The Contractor shall bear the expense of providing alternate equipment, which will work within the available space, if space availability problems are discovered after equipment is ordered.

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

1.13 LAWS AND REGULATIONS

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

1.14 QUALITY ASSURANCE

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

1.15 RELIABILITY

A. General

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

B. Warranty

1. The Contractor shall act as the primary point of responsibility and contact in resolving all audiovisual system defects including those involving Owner Furnished Contractor Installed (OF/CI) equipment.
2. The Bidder shall make known, in writing, at time of bid any exceptions that might exist between conditions described herein and Bidder's policy of warranty. After acceptance of bid, all conditions and requirements of warranty described herein shall apply.
 - a. The Contractor shall guarantee all equipment, materials, and labor for a period of 1 year from the date of final acceptance.
 - b. During the warranty period, within 4 hours of notification, the Contractor shall answer all service calls and requests for information.
 - c. During the warranty period, within 24 hours of original notification, the Contractor shall provide emergency service to restore operation of the system, replacing defective materials, repairing faulty workmanship, making temporary repairs, and providing loaner equipment as necessary, all at no charge.
 - d. The Contractor shall notify the Owner before any service call whether such call is or is not covered under warranty. The Owner may be billed for non-warranty calls. The Contractor shall notify the Owner of any service call or work to be performed for which charges may be incurred before such work commences.
 - e. Improper functioning, for warranty purposes, means failure of the system to meet the intentions of the specification because of internal defects. It does not include Owner caused malfunctions such as re-adjustment of the controls, re-tuning of the system, or injury to the system beyond normal wear. Nor does the warranty cover paint, exterior finishes, fuses, lamps (including projection lamps) or associated labor, unless the damage or failure results from defective materials or workmanship covered by the warranty.
 - f. The Contractor shall take such actions at the time of installation to insure that all equipment is installed in accordance with the manufacturer recommended environmental and electrical operating conditions and requirements. After installation, the Contractor shall be responsible for the repair or replacement of said equipment that the Contractor installs which fails due to environmental or electrical conditions, even if not covered by the manufacturer's warranty. The Contractor shall not be held responsible for damages due to changes in environmental conditions, which occur after system acceptance.
 - g. Unless otherwise directed, the Contractor shall activate all manufacturer warranties in the Owner's name. The start date of the warranties shall be the date of final acceptance.
 - h. If the Contractor has modified certain components, the manufacturer warranty may be void. In this case, the Contractor is responsible for providing warranty coverage equal to that of the manufacturer.

- i. Certain subsystems and system components may require installation by authorized representatives in order for the complete manufacturer warranty to apply. If this pertains to any subsystem or component for this project, it is the Contractor's responsibility to make arrangements for the complete manufacturer warranty to apply. These arrangements are to be at no additional cost to the Owner.
- j. As part of the bid response, the Contractor shall provide the Owner with a proposal to extend the Warranty to cover Year 2 and Year 3 of operation. These offerings are to include all parts and all labor; all conditions and restrictions listed above apply.

1.16 ALTERNATE EQUIPMENT

- A. All bids shall be submitted based on the specified equipment. The Bidder may propose alternate equipment. However, all such proposals shall be submitted separately and will be identified as "alternates" with equipment costs shown separate and apart from the costs of the equipment "as specified".
- B. Proposals for alternate equipment will receive careful and equitable consideration if the differences do not depart from the overall intent of the design and operation of the system, and are in the best interests of the Owner. All proposed alternate equipment shall work with the existing infrastructure.
- C. All such proposals for alternate equipment shall be accompanied by full technical information, "cuts" and specifications for the equipment so proposed. The Bidder shall identify the substantive differences between the alternate and the specified equipment.
- D. Owner and Consultant approval in writing is required before an alternate can be considered approved for use. It is at the discretion of the Owner and Consultant to determine if proposed alternates are considered acceptable and approved for this scope of work.

1.17 EXCEPTIONS AND PROPOSED MODIFICATIONS

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

1.18 DEVIATIONS

- A. For deviations in equipment or hardware after contract award, the Bidder shall provide a written statement describing why such deviations are requested. The Bidder shall also provide the manufacturer's specifications and warranty information on proposed substitutions. The Contractor shall be responsible for repaying any additional expenses incurred by other trades, the Consultant, the Architect, and/or the Owner, as a result of instituting such deviations without prior approval.

1.19 REVIEW AND INTERPRETATION DURING BIDDING

- A. Notify the Architect and Consultant of any omissions, discrepancies or ambiguities in the documents so a clarification may be issued. Notify Architect, Owner and Consultant if exception is taken to any statement, indication or criterion in the contract documents.
- B. Obtain all other contract documents, including architectural, structural, mechanical and electrical, and check to ensure there are no conflicts with work of this section. Notify the Architect and Consultant of all such conflicts, with any suggested alteration to resolve conflicts.
- C. Submit all above notification in writing to the Architect and Consultant no less than 14 days prior to bid opening date. Lack of notification shall be understood to indicate acceptance of all requirements of the contract documents, and any future claims shall be rejected.
- D. Interpretations or correction to the contract documents shall be issued by Addendum. Interpretations or corrections given by any other method shall not be binding.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTIONS

- A. This section of the report contains our understanding regarding the audiovisual capabilities needed to support the facilities discussed in this document. They are outlined on a system-by-system basis. Audio, video, and control system requirements, plus general AV related connectivity and equipment locations are described herein.
- B. AV Spaces
 - 1. Multipurpose rooms – 3 rooms combinable (see AV system diagrams for room numbers)
 - 2. Computer Training (integrated with MPR)
 - 3. Medium Conference rooms – 12 rooms (New systems)
 - 4. Small Conference rooms – 2 rooms
 - 5. Press Room
 - 6. Medium Conference rooms – 5 rooms (re-use of MX800 OSE)
 - 7. Executive Conference room – (re-use of MX700 dual screen plus supplemented equipment)
 - 8. Lobby Video Wall – 2 spaces
 - 9. Small Huddle Conference rooms – 8 rooms
 - 10. Executive Office
 - 11. Open area Display

1.1 Multipurpose rooms

- A. There are three multipurpose rooms that can combine into one. Each room can work as an independent AV system as well as in combined mode. Configuration of room combine modes will be through the touch panel in the center room. Room combine will not be automated with room divider sensors.
- B. Each room will have a 90-inch display sized for adequate coverage for the room. When combined, the display will serve to provide video coverage for its own space. Source routing is flexible but it is recommended that the same image is displayed on all screens for complete coverage of the presentation material.

- C. HDMI inputs are available in poke thru devices located within the space for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source.
- D. AV system equipment will be located in an AV closet on the same floor. Equipment includes
 - a. A dedicated room PC
 - b. Cable TV tuner
 - c. Digital video router
 - d. Camera matrix controller
 - e. Control processor
 - f. Audio DSP
 - g. Wireless microphone receivers
 - h. Wireless video Gateway
- E. The audio system in the space will include multiple wireless microphone systems, overhead ceiling speakers, multiple amplifier channels, and an overall assistive listening system. All audio will be routed through a programmable digital signal processor sized to support the space.
- F. Steerable ceiling microphones will be installed in each room
- G. The audio system will include a life safety override shunt to mute all audio in the event of an emergency announcement from the fire alarm system.
- H. Each of the multipurpose rooms will have one wall mounted camera located beneath the display and two ceiling mounted cameras. These cameras will be controlled and selected by a matrix controller in the AV rack
- I. Room combine options will be (rooms 1,2,3) Room 2 is the master control when rooms are in combine mode.
 - a. Rooms 1&2
 - b. Rooms 2&3
 - c. Rooms 1,2&3
- J. The multipurpose room system can send video presentation and audio to the adjacent Computer training room. The signals are one way only for the purpose of overflow, should the MPR require additional seating.
- K. Video conference capability will be through the dedicated room PC with a soft codec solution to be determined by the client. Camera and audio are to be routed by USB from the camera matrix. A keyboard and mouse extender is included with the option of an OSE monitor in the space for control of the soft codec applications. Content from the router can be shared by an input to the camera matrix.
- L. IP streaming is available through the dedicated room PC and managed by the IT department. Sources to be the same as for video conference.
- M. Each of the multipurpose rooms will have a lectern location with a corresponding poke thru for connection of a digital source and a lectern microphone.
- N. Each of the multipurpose rooms will have a wall mounted touch panel for system control as well as a secondary touch panel that can connect to the client LAN and work with the control system.

- a. In room combine mode, the center room panel controls the AV system. The other panel is locked and not available.

1.2 Computer Training room

- A. The computer training room will have a 90-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.
- B. HDMI inputs are available in poke thru devices located within the space for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source.
- C. AV system equipment will be located in an AV closet on the same floor. Equipment includes
 - a. A dedicated room PC
 - b. Cable TV tuner
 - c. Digital video router
 - d. Camera matrix controller
 - e. Control processor
 - f. Audio DSP
 - g. Wireless microphone receivers
 - h. Wireless video Gateway
- D. The audio system in the space will include multiple wireless microphone systems, overhead ceiling speakers with amplifier. All audio will be routed through a programmable digital signal processor sized to support the space. This DSP unit is included within the MPR system
- E. Steerable ceiling microphones will be installed in the room
- F. The audio system will include a life safety override shunt to mute all audio in the event of an emergency announcement from the fire alarm system.
- G. The computer training room will have one wall mounted camera located beneath the display and one ceiling mounted camera. These cameras will be controlled and selected by a matrix controller in the AV rack
- H. The computer training room can serve as overflow to the multipurpose room for the purpose of overflow, should the MPR require additional seating.
- I. Video conference capability will be through the dedicated room PC with a soft codec solution to be determined by the client. Camera and audio are to be routed by USB from the camera matrix. A keyboard and mouse extender is included with the option of an OSE monitor in the space for control of the soft codec applications. Content from the router can be shared by an input to the camera matrix.
- J. The computer training room will have a wall mounted touch panel for system control as well as a secondary touch panel that can connect to the client LAN and work with the control system.

1.3 Large Conference rooms

- A. Each large conference room will have a 90-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.

- B. HDMI inputs are available at the table for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source.
- C. AV system equipment will be located in an AV closet on the same floor. Equipment includes
 - a. A dedicated room PC
 - b. Cable TV tuner
 - c. Digital video router
 - d. Camera matrix controller
 - e. Control processor
 - f. Audio DSP
 - g. Wireless microphone receivers
 - h. Wireless video Gateway
- D. The audio system in the space will include overhead ceiling speakers with amplifier. All audio will be routed through a programmable digital signal processor sized to support the space. This DSP unit is included within the MPR system
- E. Table microphones will be installed in the room
- F. The large conference rooms will have one wall mounted camera located beneath the display. The camera will be controlled and selected by a matrix controller in the AV rack
- G. Video conference capability will be through the dedicated room PC with a soft codec solution to be determined by the client. Camera and audio are to be routed by USB from the camera matrix. A keyboard and mouse extender is included with the option of an OSE monitor in the space for control of the soft codec applications. Content from the router can be shared by an input to the camera matrix.
- H. The large conference rooms will have a touch panel that can connect to the client LAN and work with the control system.

1.4 Medium Conference rooms

- A. The medium conference rooms will have a 65-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.
- B. An HDMI input is available at the table for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source. This source is for in room display only through the display.
- C. A Polycom Trio Visual plus will be available. Content sharing will be through the table unit.
- D. AV system equipment will be located behind the display.
- E. Video conference capability will be through the Trio system.
- F. Room audio will be through ceiling mounted speakers
- G. The medium conference rooms will have a wall mounted touch panel for system configuration.

1.5 Small Conference rooms

- A. The small conference rooms will have a 55-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.
- B. An HDMI input is available at the table for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source. This source is for in room display only through the display.
- C. A Polycom Trio Visual plus will be available. Content sharing will be through the table unit.
- D. AV system equipment will be located behind the display.
- E. Video conference capability will be through the Trio system.
- F. Room audio will be through ceiling mounted speakers
- G. The small conference rooms will have a wall mounted touch panel for system configuration.

1.6 Press Room

- A. The Press Room is to be utilized for open news conference.
- B. A 55-inch display will be located at the front of the room on a ceiling pole mounted. Presentation material is routable from sources within the rooms.
- C. HDMI inputs are available. One at the rear wall and one in a poke thru unit at the front of the room. for connections to Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source.
- D. AV system equipment will be located in an AV closet at the rear of room. Equipment includes
 - a. A dedicated room PC
 - b. Cable TV tuner
 - c. Digital video router
 - d. Camera matrix controller
 - e. Control processor
 - f. Audio DSP
 - g. Wireless microphone receivers
 - h. Wireless video Gateway
- E. The audio system in the space will include overhead ceiling speakers with amplifier. All audio will be routed through a programmable digital signal processor sized to support the space. This DSP unit is included within the MPR system
- F. A steerable ceiling microphone will be installed to pick up conference participants within the room.
- G. The audio system in the space will include multiple wireless microphone systems, overhead ceiling speakers with amplifier. A goose neck microphone will be available at the lectern. All audio will be routed through a programmable digital signal processor sized to support the space.
- H. The Press room will have one wall mounted camera located beneath the display. The camera will be controlled and selected by a matrix controller in the AV rack.

- I. IP streaming is available through the dedicated room PC and managed by the IT department. Sources to be the same as for video conference.
- J. Video conference capability will be through the dedicated room PC with a soft codec solution to be determined by the client. Camera and audio are to be routed by USB from the camera matrix.
- K. The Press room will have a touch panel that can connect to the client LAN and work with the control system.
- L. Video and audio sources will be available to room participants via a press bridge panel at the rear of the room. Balanced audio and SDI connections
- M. A separate service provider will access the camera and audio for broadcast network connectivity. AV contractor is to verify signals to provider. Provider is to manage broadcast distribution.

1.7 Medium Conference rooms with Re-Used MX systems.

- A. Owner to provide MX800 single display systems.
- B. AV Contractor to adapt systems to wall mount.
- C. New HDMI extender is to be installed from table for content share in codec.
- D. AV contractor is to verify functionality of OSE gear prior to installation.

1.8 Executive Conference room with Re-Used MX system

- A. Owner to provide MX700 dual display system.
- B. AV Contractor to adapt systems to wall mount.
- C. New HDMI extender is to be installed from table for content share in codec.
- D. AV contractor is to verify functionality of OSE gear prior to installation.
- E. Audio system is to be added to existing MX system
 - 1. New table microphones
 - 2. DSP system
 - 3. Ceiling speakers and amplifier

1.9 Lobby Video wall systems

- A. The Lobby video wall systems will each have a 2x2 video wall using 55" displays per master quote.
- B. Video wall is to have a four-input processor that will select and distribute
 - a. Dedicated PC
 - b. CATV tuner
- C. Control of the video wall systems is to be through IP interface through the system's web browser. Refer to the manufacturer's specifications for installation and setup.

1.10 Small Huddle Conference rooms

- A. The small conference rooms will have a 55-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.
- B. An HDMI input is available at the table for connections from Laptop PC and other digital devices with HDMI, DVI or DisplayPort outputs. Audio for these devices is to be within the video source. This source is for in room display only through the display.
- C. Room audio will be through ceiling mounted speakers
- D. The small conference rooms will have a wall mounted touch panel for system configuration.

1.11 Executive office

- E. The executive will have a 55-inch display sized for adequate coverage for the room. The display will serve to provide video coverage for the space.
- F. An HDMI input is available at the desk for connections from the office PC.
- G. CATV tuner will be available for source to the display
- H. Room audio will be through ceiling mounted speakers
- I. Room control will be through hand held remote for display and CATV tuner.

1.12 Open area display

- A. The open area will have a 55-inch display. The display will serve to provide video coverage for the space.
- B. CATV tuner will be available for source to the display
- C. Room audio will be through display speakers
- D. Room control will be through hand held remote for display and CATV tuner.

PART 3 EXECUTION

3.1 SUBMITTALS

A. General

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

B. Software

1. The Contractor shall secure from the Owner or Owner's Representative, in writing, approval for all control surface layouts, audio DSP device configurations, or other customized software product applications prior to installation.
2. Preliminary Control Surfaces Submittal
 - a. Prior to creation of the preliminary control surface submittal the Contractor shall coordinate a meeting among Contractor, Consultant and Owner to discuss overall programming intent and specific requirements or concerns that the Owners or consultant has related to the control surface look, operation and capabilities.
 - b. The intent of the preliminary control surfaces submittal is to create a base level collaboration tool whereby the contractor can solicit direction from the Owner and Consultant towards a mutually agreeable design. Based upon the equipment lists and control system functionality provided in the Audiovisual Systems Specification and in combination with the system topology illustrated on the signal flow drawings, the Contractor shall generate preliminary control surface layouts for all pushbutton panels, touch sensitive panels, PC based controllers or other control surfaces. The Contractor should endeavor to make the preliminary layouts as complete as possible. The layouts should illustrate all pushbuttons, labels, bar graphs, timers, video windows, etc. for each control panel and each system page. The Contractor should include suggestions for color schemes and graphics where applicable.
 - c. It is recommended that control touch panel layouts conform to the InfoComm Dashboard for Controls Design Guide. This design guide is available on the InfoComm website at <http://www.infocomm.org>.
 - d. The contractor shall receive written response indicating approval to proceed, or changes required to the control surfaces layouts, within 10 working days of receipt of the submittal by the Owner/Consultant.
3. Revised Preliminary Control Surfaces Submittal
 - a. If changes are required to the preliminary control surfaces submittal, the contractor shall generate a revised preliminary control surfaces submittal to include the additions, changes or revisions generated by the preliminary submittal review. The form and quantity of the submittal shall be identical to the preliminary submittal unless otherwise directed. If the revised control surfaces submittal reflects those additions, changes or revisions called for in the preliminary submittal review, the contractor shall receive written approval to proceed within 10 working days of receipt of the submittal by the Owner/Consultant.
 - b. The Contractor shall respond with the updated control surface submittal capturing all required changes indicated in the Owner/Consultant response within 10 working days of receipt of the response.
 - c. A minimum of two control surface revisions shall be provided.
4. Post-Integration Adjustments
 - a. If so requested by the Owner or Consultant, and within 90 days of system acceptance as outlined in 'System Acceptance', the Contractor shall be prepared to make two visits to the site to make final minor adjustments to the control system code or programming without additional compensation. This could include, but may not be limited to, renaming or changing the size or location of buttons, page flip calls, or adjustments to code to provide a fully functioning system. If engraved control system panels require modification at a cost to the Owner, such cost information must be submitted to the Owner for approval prior to any work being performed.
 - b. The Contractor shall be responsible for insuring that any changes to the control system or control surfaces that occur post integration are appended to the Final System Documentation.

C. Shop Drawings

1. The Contractor must receive written approval from the Owner prior to fabricating or installing any materials. Approval will be given based upon shop drawings. The shop drawings shall indicate complete details of work to be performed. The Contractor shall submit electronic copies of shop drawings to the Owner and Consultant for review and approval. Drawings shall include a title block naming the project, Owner and Consultant, and, shall include a drawing title, drawing number, revision number if applicable and date.
2. The shop drawings listed below are required of the Contractor. Provide electronic files and up to (1) paper set if requested by Owner or Consultant. Submit all Shop Drawings complete as a single submission. Isolated items will not be accepted, except with prior written approval.
 - a. System Signal Flow: Complete functional system signal flow of all systems described herein and meeting the functions indicated in the Specification.
 - b. Cabling Schedule: A list containing the cable type, cable marker identifier, and origination and destination location and connector types for each cable.
 - c. Examples representative of the Contractor's final cable marking technique for each cable type.
 - d. Loudspeaker Mounting Details: Scaled drawings of complete loudspeaker mounting details, hardware and support surfaces, including details on all load requirements, safety factors, safety cables and structural materials.
 - e. Projector Mounting Details: Scaled drawings of complete projector mounting details, hardware and support surfaces, including details on all load requirements, safety factors, and structural materials.
 - f. Structural Anchorage: Provide structural calculations, drawings and details for the anchorage of equipment racks, loudspeaker rigging hardware, the projector rail-mount system, and all other mounts or hardware that attach to structure. The design shall be reviewed and approved by a Structural Engineer licensed in the project state.
 - g. Optical Systems: Scaled drawings to verify that the proposed projection devices, lenses and related optical systems will provide the desired image size. The Contractor shall be responsible for field verification of the on-site conditions if required.
 - h. Panels: Scaled drawings of interconnect panels, control surfaces, and other custom interfaces.
 - i. Peripheral Equipment: Scaled drawings of mounting arrangements of any peripheral equipment, which may be included in this Specification.
 - j. Equipment Rack Layouts: Fully detailed rack drawings indicating equipment orientation within the equipment rack.
 - k. Technical Furniture: Scaled drawings of all technical furniture indicating dimensions, materials, finishes, equipment locations and orientation, cable management accommodations, and all other details necessary to convey the physical and functional aspects of the furniture.
 - l. Others, as may be required by the Architect, Consultant or Owner.

D. Labels / Wire Markers

1. Except where otherwise indicated, all rack-mounted equipment, switches, controls, and interface panels shall be clearly labeled.
 - a. Panels and plates shall be a minimum 1/8" thick anodized aluminum etched and epoxy filled unless otherwise specified.

- b. Rack mounted equipment shall be labeled with engraved and filled plastic laminate. Where appropriate, the function of, or the input, output, or loudspeaker(s), served by each device shall be indicated. Other methods of labeling rack mounted equipment may be accepted pending prior written approval by Owner.
- c. All cables shall be permanently identified at each end by machine printed cable markers and protected by the appropriate size clear shrink tubing. Every cable shall have a unique tag number identifier for each cable. The Contractor shall include this unique tag number on the As-Built signal flow documentation. Each cable marker shall include, in addition to the unique tag number identifier, the name of the origination and destination equipment termination at each cable end (see example below). Cable markers shall be placed two (2) inches from where the cable exits the strain relief of the connector, but never within a cable bundle.

2. Identification Panel

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

3.2 CONTROL SYSTEM REQUIREMENTS

A. Control System User Interface

1. All panels are to have the time and date as icons, in the same position on every page.
2. All panels are to have a title, indicating the piece of equipment and/or functionality being controlled.
3. No individual component shall be programmed to function atypically.
4. Devices similar in nature shall be programmed to operate with a common format.
5. Pages for source equipment shall conform to the following guidelines:
 - a. Transport controls should be on the main device page.
 - b. The primary transport controls, <Play>, <Stop> and <Pause> should be larger than the other transport controls.
 - c. Buttons shall include both graphic images and text.
 - d. A button shall be included for a pathway to device specific controls, including menus and advanced device functions.
 - e. A button shall be included for a pathway to recording functionality. This shall include a single-bus control for the recording source.
6. Final programming shall include capability to remotely control all functions of the audiovisual system. Individual device controls shall provide full manufacturer's functionality.
7. 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.
8. Provide control panel layouts that are consistent from page to page. Whenever the same button appears on more than one page, it will be in the same position on each page.
9. Functions used during a general presentation shall be accessible with a minimal amount of button presses/page flips.

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

B. Control System Hardware

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

C. Additional Control System Surfaces

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

3.3 INSTALLATION PRACTICES

A. General

1. All equipment shall be installed in accordance with this Specification, approved shop drawings, and manufacturer's recommendations.
2. All equipment with the exception of portable equipment shall be firmly fastened or attached in place. A safety factor of at least five or a published safe working limit shall be utilized for all brackets, fasteners and attachments. Provide safety retention cables for overhead equipment such as loudspeakers, projectors, etc.
3. In the installation of equipment and cable, consideration shall be given not only to operational efficiency, but also to overall aesthetic factors.

4. The Contractor shall insure that all equipment is installed such that proper cooling and ventilation is insured.
5. All equipment shall be installed in a manner which prevents hum, RF/EMI/EMF interference, and mechanical vibration based noises (e.g. fan mounts, etc.)
6. Projectors, lenses, and mirrors shall be solidly mounted and braced so that there will be no observable movement in the image induced by motor vibration or other mechanical operations.
7. All equipment shall be protected from construction dust and debris until final acceptance of the system.
8. All equipment shall be protected from theft until final acceptance of the system.
9. Any equipment designed for use by end-users in the facilities must be installed with theft deterrence/protection mountings and fasteners. Any tools required to mount/un-mount this equipment must be furnished to the Owner at the date of Owner acceptance.
10. The Contractor shall be obligated to protect completed work and uncompleted work against damage or loss until the Owner has given final acceptance. Should the need arise to repair work or replace items the Contractor shall do so at no cost to the Owner.

B. Furniture

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

C. Equipment Racks and Equipment Rack Cable Management

1. Racks shall be installed in such a way so as to permit access to all equipment for service.
2. Racks are considered complete components and should be completely assembled and tested at the Contractors facility prior to onsite installation.
3. All equipment in racks shall be fitted with vent panels and/or fans as required to provide ventilation and cooling according to equipment manufacturer's recommendations.
4. Adjacent racks shall be bolted together with appropriate ganging hardware.
5. As a general practice, all power cables, control cables, and high-level cables shall be dressed to the left rear of an equipment rack. Audio and video cables shall be dressed to the right rear of the rack. Audio, video and control cables shall be bundled separately and spaced not less than three (3) inches apart.
6. Internal equipment rack cabling shall be supported by lacing strips, support brackets, or other cable management systems as required to ensure that all cabling is supported in both the vertical and horizontal planes within the rack.

7. With the exception of ganged equipment rack assemblies, cabling routed between equipment racks or pieces of equipment exterior to equipment racks, or extending to the greater facility cabling infrastructure, shall be completely protected, end-to-end, by a raceway, wire-way, or duct appropriately sized for the cable run.
8. Cabling between rolling pieces of equipment not housed in rack cabinets or a rolling equipment rack and any device to which it is connected, shall be protected by a split-loom corrugated tubing wrap or other such flexible cable management system appropriately sized for the cable run.
9. Any controls not to be adjusted by the user and accessible from the front of the equipment rack must be furnished with security panels.

3.4 CABLING

A. CABLING TYPES

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

B. CABLE INSTALLATION

1. Non-contiguous cable support mechanisms such as hangers, rings, and hooks shall not be spaced farther than four (4) feet apart. All manufactured raceways used for cables shall be installed according to the raceway manufacturer's specifications
2. Cable runs shall be supported with devices designed for this purpose and are to be installed independent of any other structural component.
3. Cables routed vertically up walls, or between floors as vertical riser, shall be supported with clamps or other mechanisms. These supports shall occur at least three times per floor.
4. The Contractor shall maintain, or where not already existing, provide through penetration fire stop systems to prevent the spread of fire through openings made in fire-rated walls or floors to accommodate penetrating items such as conduit, cables or other pathway. Fire stop shall restore floor and wall to the original fire rated integrity and shall be waterproof. The fire stop systems and products shall have been tested in accordance with the procedures of U.L. and material shall be U.L. classified as materials for use in through-penetration fire stops.
5. The fire stop system shall comply with the NEC and with NFPA 101-Life Safety Code (latest edition) and shall be made available for inspection by the local inspection authorities prior to cable system acceptance. The contractor shall be responsible for verifying the fire rating of all walls and floors affected by his work.
6. Cable pulling tension may not exceed manufacturer recommendations. Where cable-pulling lubricant is used, the lubricant must be compatible (non-damaging) with the conduit and cable sleeve materials and must not harden over time to prevent future pulls.
7. Cable stapling of any recognized media type shall not be permitted.
8. Cables shall be dressed in conveniently sized bundles and either laced or banded. Lacing or banding shall not be so tight as to deform cable bundles.

9. Cabling installed with a bend radius less than that recommended by the cabling manufacturer is not acceptable.
10. Cables and bundles terminating at equipment or connector panels shall be supported so as not to put strain on connections or connectors.
11. All cables, with the exception of video or pulse cables, which must be cut to an electrical length, shall be cut to the length dictated by the run. No splices shall be permitted in any pull boxes without prior approval of the Consultant.
12. Cabling for equipment mounted in drawers or on slides shall be provided with a service loop of appropriate length. A cable management support for the service loop shall be provided to prevent the service loop travel from interfering with the operation of the drawer or slide, or snagging on adjacent cabling.
13. Where indicated on the Audiovisual Drawing Set microphone level, line level, loudspeaker level, and video lines shall be run in separate conduits, trough, raceway divider, and cable bundles. Low voltage DC and control may be run along with any signal types other than microphone or line level runs.

C. TERMINATION

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

D. AV Over UTP Cabling System

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

4. The Contractor shall test, verify and document the length and wire map of each Permanent Link cable run, each patch panel to transceiver cable segment, and each patch and equipment cord using a Fluke model 620 LAN Cable Meter or equivalent.

E. Grounding

1. General

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

2. Interconnection

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

3. Pull Strings

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

3.5 PERFORMANCE STANDARDS

A. Audio

1. Polarity

- a. Absolute signal polarity will be maintained throughout the signal chain such that a positive signal at the input produces a corresponding positive excursion at the loudspeakers.
2. Electronics
 - a. The audio system electronics shall deliver the following minimum performance standards as measured from all source inputs for microphones, audio tape machines, video tape machines, etc., through all mixers, audio distribution amplifiers, routers, etc., to all audio signal destinations.
 - b. Frequency Response: $\pm 0.5\text{dB}$, 20-20,000 Hz.
 - c. Hum and Noise: -70 dBu, 20-20,000 Hz, un-weighted.
 - d. Distortion: 0.1% THD, 20-20,000 Hz
3. Speech Signal
 - a. (a) The system shall provide a speech signal in the audience seating area that meets or exceeds the following requirements:
 - 1). Frequency response within +/- 3 dB from 500 Hz to 15,000 Hz.
 - 2). Overall SPL variance of +/- 3 dB.
 - 3). Measured Alcons of 10% or lower.
 - 4). Maximum average SPL of 85 dB (flat), with 10 dB of undistorted headroom available.
4. Music Signal
 - a. The system shall provide a music signal in the audience seating area that meets or exceeds the following requirements:
 - 1). Frequency response within +/- 3 dB from 200 Hz to 17,000 Hz.
 - 2). Overall SPL variance of +/- 3 dB.
 - 3). Maximum average SPL of 90 dB (flat), with 10 dB of undistorted headroom available.

B. Optical

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

3.6 SYSTEM SETUP AND TUNING

A. Optimization

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

B. Preliminary Tests and Submittals

1. General
 - a. Once the system is installed, the Contractor shall complete the following preliminary tests and prepare a written test report for the Consultant. The test report will list the results of each of the tests described in this section and certify that the installation is complete
2. Audio
 - a. Prior to the termination of audio amplifiers to speakers, the Contractor shall measure the resistance of the speaker line with reference to ground to determine that no short

circuits or paths to ground exist in the line. The Contractor shall connect the speaker to the cable and measure the impedance of each speaker line using a 1,000Hz signal applied to the line. The Contractor shall submit a list to the Consultant, by cable number, of the impedance of each speaker line. This test shall be performed with the amplifier disconnected from the speaker line and the speaker connected to the speaker line.

- b. Verify all loudspeakers are working.
 - c. Verify that all microphones are working and operational with no perceived feedback from loudspeaker system.
 - d. Verify that the system meets all Performance Standards as outlined in 'Performance Standards'.
 - e. Verify that all equipment, panels, and cables are labeled correctly.
 - f. Verify each item of equipment is functioning as intended.
 - g. Verify the installation is the same as specified.
3. Video
- a. To establish that the facility cabling and terminations meet industry standard specifications, a video test signal shall be applied to each input cable and passed through the system switching and distribution networks with the results measured at each system output.
 - b. In addition, the Contractor shall:
 - 1). Verify each item of equipment is functioning as intended.
 - 2). Verify the installation is the same as specified.
4. Computer Video Display Devices
- a. The Contractor shall use a computer-video test generator to establish that computer video capable displays such as flat panel, and projection devices are in good working order and optimally adjusted. The computer-video test generator shall be capable of outputting test signals on HDMI, DVI-I, DisplayPort, 5 BNC connectors, 9-pin TTL connector, 15-pin HD VGA connector, or 15-pin D Macintosh connector. The computer-video test generator shall offer the following test patterns:
 - b. Test Patterns
 - 1). Dots 12x16, Alternating pixels
 - 2). Vertical/Horizontal Crosshair
 - 3). Crosshatch 12x16
 - 4). Crosshatch 24x32
 - 5). Flat Field
 - 6). Checkerboard 100% (IRE) White
 - 7). Checkerboard 56% (IRE) White
 - 8). Checkerboard 14% (IRE) White
 - 9). 8 Level Split Gray Scale
 - 10). 8 Vertical Color Bar
 - 11). 16 Color Bar
 - 12). SMPTE and PLUGE Color Bar
5. Control
- a. Upon completion of installation, the Contractor shall test each function of each control station, push-button panel, touch screen panel, computer control interface, and all components connected to or interfaced to the Control System to verify proper operation and that each switch and indicator operates as intended.

3.7 FINAL TESTS

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

3.8 FINAL DOCUMENTATION

- A. Upon completion of the work, the Contractor shall condense the master set along with any shop drawings into a single As Built document set. Any markings or deviations, which cannot be made clear on drawings, shall be accompanied by attached documentation, photos, or written addenda.
- B. All documents and drawings must be submitted electronically in their native AutoCad and PDF format. Further, all PDF drawings must be submitted at their native scale. For example, a PDF created from a drawing whose native format was standard 'E' size (42-inch x 30-inch) shall be created at 42-inch x 30-inch (full size) to insure that there is no loss of resolution should the file be viewed or printed at a later date by the Owner.
- C. Final submission of digital As Built drawings files shall be subject to submission by the Contractor as defined under said agreement.
 - 1. Preliminary Final Documentation Submittal
 - a. Prior to Final Tests and project punch-listing, the Contractor shall prepare and submit one (1) copy of the documentation listed below to the Consultant and owner for review. The package shall include all of the documentation listed below and be in the exact form and format intended for delivery to the Owner.
 - b. The documentation shall be in electronic format AutoCad and PDF file format copies and organized as follows:
 - 1). A cover and spine listing the Owner, Consultant, and Contractor.
 - 2). A listing of each supplied item with manufacturer, model number and serial number.

- 3). Operator's manuals for each piece of equipment supplied by the Contractor.
 - 4). A complete set of as-built drawings. The as-built drawings must reflect all changes to the system(s) made after the original bid documentation. The size of the as-built drawings shall be identical to the original drawings provided to Contractor, folded and inserted into the binders in plastic sleeves. Alternative formats may be acceptable upon prior approval by the Consultant and Owner.
2. Final Documentation Submittal
 - a. Following successful completion of Final Tests and punch-listing, the Contractor shall prepare and submit to the Consultant and Owner electronic copies of the documentation listed under the Preliminary Final Documentation Submittal. The Final Documentation Submittal will include any and all adjustments or changes identified during the Preliminary Final Documentation Submittal review.
 - b. The documentation shall contain PDF file-format copies for items 1 through 4 in Section A above and include detailed digital photographs showing the front views of all equipment racks. The photographs shall accurately reflect equipment front-panel settings at the time of project sign-off. All photographs must be properly exposed and focused, clearly showing the final settings for every device's push buttons, rotary controls, slider controls, or indicators. Subject areas must be free from glare as a result of flashes or other ambient lighting. Subject areas shall fill the image frame in a suitable manner. For large equipment racks, multiple exposures may be required, each indicating a separate portion of the rack. NOTE: All digital images shall be comprised of at least 1600 x 1200 viewable pixels, 24-bit color depth, JPEG file format.
 3. Software
 - a. Where custom software is developed as part of this project, the system source code and any associated related files, referenced files, and development software (and all relevant documentation and license) used to compile, develop, and build, etc. the executable code must be provided to the Owner only. The source code should be well documented in accordance with industry software engineering practices.
 - b. The software developer shall retain intellectual property rights; the Owner shall have a license for perpetuity for use as it applies solely to this project, including the right to modify/enhance. The software code may not be sold or used, in part or in whole, in any other project or application other than that intended by this specification, in part or in whole, by the Owner or any other party.
 - c. If a Subcontractor is used to write the software, the Contractor shall include, as part of the Final Documentation submittal, a signed letter on Subcontractor letterhead, granting the Owner ownership, use, and modification rights of the code and documentation as defined herein. The software shall be provided to the Owner as part of the Final Document Submittal.
 - d. Copies of all manufacturer software required to program, compile, load and adjust audiovisual hardware settings or programming shall be provided.
 - e. Copies of the current firmware and/or hotfix versions for all equipment with programmable firmware.
 4. Delivery & Approval
 - a. Unless otherwise arranged, The Contractor shall prepare and submit one complete set of the Final Documentation to the Consultant for review at the time of Final Tests. The package shall include all of the documentation listed above and be in the exact form and format intended for delivery to the Owner.

- b. If the Final Documentation submittal is determined by the Consultant to be complete and accurate, the Consultant will approve the submittal and forward the Final Documentation package to the Owner.
- c. If the Final Documentation submittal is determined by the Consultant and/or Owner to not be complete and/or accurate, the Consultant will return the package to the Contractor with a written listing of the required modifications. Upon completion of all of the required modifications, the Contractor shall resubmit the Final Documentation to the Consultant and Owner for approval. The Final Documentation submittal shall not be considered to be complete until all required modifications have been made and approved by the Consultant and Owner.

3.9 TRAINING

- A. The Contractor shall provide a minimum of 60 hours of on-site training for (but not limited to) the Owner's staff at a time that is mutually agreeable for the Owner and Contractor.
- B. Contractor shall provide (1) additional day for system walk thus etc. at the request of the Owner and/or Consultant.
- C. The Owner may choose to have the sessions spread out over a period of time and vary the staff being trained and the level of training. Final acceptance and/or final payment for the system shall not be delayed due to scheduling delays beyond the control of the Contractor. Contractor, should also be available for requested additional training.
- D. As part of user training Contractor shall provide single page laminated room use cards for all rooms and tailored to each specific room type. Room card shall include:
 - 1. Simple instructions for basic user functions (system on, off, media, making VTC & ATC calls).
 - 2. Help desk contact information.
 - 3. Room type capabilities (presentation, VTC, ATC, etc.)
 - 4. Electronic version of the room use cards shall be provided to the Owner two weeks prior to move-in to allow for Owner formatting and review.

3.10 ONSITE SUPPORT STAFF

- 1. For the period of 5 days the Contractor shall provide (1) staff member onsite week days from 9am to 5pm to help support Owner move-in, administrative staff training, ongoing system troubleshooting and adjustment.
- 2. The staff member provided shall be familiar with the installation and operation of the system specified and shall have been onsite with the installation team at least two weeks prior to Owner move-in.

3.11 SYSTEM ACCEPTANCE

- A. Upon successful completion of Final Tests, Documentation and Training, the Contractor shall notify the Owner, in writing, that the system is complete which notification shall be accompanied by consultant's continuation of completion. The Owner shall have fifteen (15) days to generate a punch list of omissions, adjustments, corrections and the like and respond in writing to the Contractor. In the absence of such a Punch List, the system shall be considered to be complete. The warranty shall commence on the day after Owner shall have conformed, in writing, that the work has been completed in accordance with the requirements of the contract documents or, if Owner fails to provide such written confirmation, or the Punch list, within each

fifteen (15) day period, on the fifteen day after the Contractor's notification of completion of work (accompanied by consultant's confirmation), and the Owner thereupon shall process final payment. In the event that further work is required to complete this project, the Contractor shall be prepared to continue work, without additional compensation, until the system is accepted.

END OF SECTION 27 41 16



28 LIBERTY

Rules and Regulations

For Contracted Service Personnel

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28 Liberty Street
RULES AND REGULATIONS
FOR CONTRACTED SERVICE PERSONNEL

Updated: 11/16/2016

The following Rules and Regulations will be strictly adhered to by all contractors, vendors, consultants, etc. working in or visiting 28 Liberty Street. In all cases, coordinate activities or questions with the Building Office. The General Contractor, Project Manager or other Project Lead is to issue a copy of these rules to all subcontractors and to all employees.

The BUILDING OFFICE reserves the right to require removal from the building of any contractor or subcontractor's employee exhibiting behavior that would justify termination under BUILDING OFFICE guidelines. Such action does not waive the contractor's responsibility to complete the job as agreed.

SAFETY PROCEDURES

1. The contractor/subcontractor is to provide and maintain a safe, hazard-free environment during all phases of work, for example:
 - a. Correction of all slippery conditions and ensure that no hazard exists
 - b. Prevention of any danger from falling objects
 - c. Use of safe procedures with equipment
2. No storage of flammable substances will be allowed in the Building unless approved by the Building Office and stored in accordance with approved building codes and NFPA regulations. When such storage is authorized, the volume of this material shall be as minimal as possible and only so much as required for the immediate work, and shall be stored in the proper U.L. rated fireproof enclosure. Material Safety Data sheets must be prominently posted.
3. Any equipment powered by diesel fuel, gasoline, propane and other fossil fuels may not be used in the building without the expressed written permission of the Building Office.
4. After contractor completes daily work, all areas are to be cleaned and swept. Any improperly stored material or materials left in non-construction areas will be removed. Any costs incurred by the Building Office to remove such remaining debris will be charged to the contractor.

5. The contractor shall give all notices and comply with all Government Requirements (including, without limitation, all applicable regulations of OSHA) and all reasonable rules, regulations and orders of the Building Office bearing on the safety of persons and property or their protection from damage, injury or loss. On-site General Contractor supervision is required at all times while the work is being performed. It will be the responsibility of the General Contractor that all work adheres to all OSHA Safety Regulations.

The contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including, but not limited to, posting danger signs and other warnings against hazards, promulgating safety regulations, notifying owners and users of adjacent utilities, and erecting and maintaining such barricades and danger signals as are required to protect the work and adjoining persons and property, or as required by the Building Office and Government Requirements.

The contractor shall furnish, and maintain charged and mounted for ready use, fire extinguishers, fire pails and similar firefighting equipment, all of approved type, size and in quantities required by the Jurisdictional authorities. All of contractor's employees shall be properly trained in the operation of all firefighting equipment on site.

The contractor shall post emergency phone numbers conspicuously on the site and shall brief construction personnel on their use in accordance with the Building Office's instructions.

The contractor shall take all reasonable precautions for the safety of, and provide all reasonable protection to prevent damage, injury or loss to:

- a. All of its employees at the site and all other persons who may be affected thereby;
- b. All of its tools and equipment used on the work and all materials and equipment to be incorporated in the work, whether in storage on or off the site, or under the care, custody or control of the contractor, subcontractor or any bonded warehouse;
- c. Other property at the site, or in the immediate vicinity of the site, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The contractor shall promptly remedy all damage or loss to any property which is caused in whole or in part by the contractor, any subcontractor, or by anyone for whose acts any of them may be liable and for which the contractor is responsible thereunder, without reimbursement from the Building Office or Owner other than the insurance proceeds therefore, except damage or loss attributable to the acts or omissions of the Owner or Consultant or anyone directly or indirectly employed by either of them, or by

anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the contractor.

The contractor shall not load or permit any part of the work to be loaded so as to endanger the safety of the work. All staging of materials will take into consideration floor loads. The Chief Engineer can, at any time, have a contractor or subcontractor move a load at his/her request.

The contractor shall at all times provide and maintain adequate protection against weather conditions so as to preserve all work, materials, equipment apparatus, fixtures and the work area from injury or damage.

The Building Office may provide watchmen at contractor's expense, if it deems it necessary for the proper protection of the work site; however, neither the Building Office nor the consultant shall be liable for any acts or omissions of said watchmen.

The contractor and its subcontractors and material men shall cooperate fully with all interested parties on accident prevention and claims handling procedures.

GENERAL

1. Building Office requires a minimum **14-Day** notification for any and all shutdowns inclusive of a written Methods of Procedure ("MOP"s). Shutdowns of any riser impacting existing service to any other tenant will require a minimum thirty **(30) Day** advance written notification inclusive of a written Methods of Procedure ("MOP"s) which will be approved by the building 14 days in advance prior to shut down or tie-ins. All demolition work also requires a MOP. (Sample MOP attached)
2. Any requests for Engineering or Electrical support must be submitted 48 hours in advance. Service Request to be submitted via Building Engines. (After approved MOP is in place – if required)
3. Freight cars should be scheduled with the Building Office 48 hours in advance via a service request in Building Engines. A charge for freight and guard services will apply.
4. A valid permit is required for all remodeling/renovation work (including landmarks) to be done at 28 Liberty Street. A copy of the permit must be given to the Building Office before any work can commence.
5. Project Manager is required to submit, for review and consent, two half-size sets of detailed drawings of all remodeling work planned in the building to the Building Office prior to submitting same to City for permit. Three (3) sets of full size drawing for any structural project work that requires landlord approval. The Building Office will return written questions and/or comments and/or consent regarding the drawings and scope of service to Project Manager within ten (10) business days.

6. No changes may be made to the finishes, height of ceiling, width of doors, amount or color of lighting, or other characteristics of the building and floor common areas, including but not limited to freight lobby, elevator lobby, core restrooms, without the express written pre-authorization and approval of Building Office.
7. Project Manager must submit the names of the General Contractor and all subcontractors to the Building Office. Upon receipt of the vendor list the Building Office will reply with consent of the vendors that have been approved. The Project Manager must ensure there is a written consent of all contractors prior to issuing work contracts and a 24-hour emergency contact list is provided to the Building Office for all general contractors and subcontractors before any work commences. General Contractor and all subcontractors must comply with the Building Rules and Regulations detailed herein and as directed by the Building Office and/or Chief Engineer, including, but not limited to, evidence of insurance meeting building owner's requirement, hours of work, access procedures and compliance with building specifications for mechanical, electrical, plumbing and fire protection systems.
8. Project Manager or General Contractor must submit a copy of the applicable DOB permits and detailed schedule for the remodeling or renovation work before work can commence, to the Building Office.
9. Upon successful completion of the remodeling or renovation work, the Project Manager or General Contractor must submit as built drawings for all mechanical, electrical, plumbing, fire protection systems, plus architectural as built drawings electronically in CADD version 16 or higher and a hard copy to the Senior Real Estate Manager, as well as OEM manuals, required Sign-Offs and all warranty documentation. Project Manager or General Contractor must also submit to Senior Real Estate Manager a Certificate of Occupancy upon project completion.

CONTRACTOR/SUBCONTRACTOR REGULATIONS

1. The contractor will make certain that all workers are properly and visually identified at all times while on the property.
2. At all times working trades, subcontractors and deliveries must maintain "**Labor Harmony.**"
3. Proper conduct and dress codes are to be followed by all members of the contractors and sub-contractors work force. Any violations of this rule will result in dismissal from the building.
4. Contractors and their employees are only allowed to access their construction floors via the freight cars. Use of passenger cars is **prohibited.**

5. Access & Check in Procedures – The normal working hours of work on occupied and non-occupied floors are 7:00 am – 5:00 pm, Monday through Friday. Permission is required to work any other time. After hours admittance to the building shall be governed by Security via a security report matrix. The security report will define all persons permitted to work in the building, their schedule, access area, and nature of the work they are performing. This information is necessary so that Security and in-house trade staffs are aware of the work, any security or safety issues related to it, and how it might impact building systems.

All contractors and subcontractors must obtain a temporary building contractor badge for each employee before any employee of contractor or subcontractor can work in the building. Each employee of the contractor or subcontractor must display these badges at all times when working in the building. General Contractor is required to request the badges, in advance of project commencement by providing a list of the individuals' names and company they are representing. All access requests shall be submitted to the Building Office at least **48 hours in advance**. All contractors, subcontractors and their employees and/or visitors must access the building via the loading dock or Liberty Street freight entrance. All contractors must check in with the Building Engineers or the Building Office before accessing the construction floor. At the time of check in the contractors must submit the proper identification and/or certifications for any work required during that shift. The engineering staff will provide all Building Office required work permits required for that shift. Upon completion of the work shift the contractor must check out with the building engineers. A check out of the work space will be required before any trades are authorized to leave the building.

The Building Office will compile the Security Report Matrix each business day by noon. Contractors and vendors are responsible for contacting the Project Manager with the information required to update the list each business day. The Project Manager or General Contractor, with a copy to the Project Manager, shall update his or her Security Report for all personnel working under its direction and submit same to the Building Office by **11:00 am** each business day. **Access for weekends or holidays will be produced on the business day preceding the weekend or holiday and will be distributed by 2:00 PM. Any contractors/subcontractors or scope of work not on the Weekend Security Report will not be permitted in the building.**

No one will be permanently on the list or carried forward on a daily basis unless approved by the BUILDING OFFICE Manager. Any individual found not in compliance with the procedures outlined above may be escorted from the building.

6. Parking - There will be no contractor parking in the loading dock without prior approval from the Building Office. Vehicles must be removed after loading and unloading. All deliveries or pickups will be limited to 30 minutes. Those staying longer than 30 minutes or not signing in with the dock security are subject to tow at the vehicle owner's expense and/or to banishment from future use of loading dock facilities.
7. Freight Elevators - All workers are required to use the Buildings' freight elevators if an exterior hoist is not available. After-hours deliveries will require scheduling of elevator time at least **48 hours in advance**. Requests for opening the hatch or using the top of the car will require the resident elevator company to operate the car. Requests for overtime use of the elevator will require an operator. Both of these services will result in charges to be paid by the Contractor. All requests must be made to the Building Office on the Elevator Scheduling Request form (see Attachment).
8. Restricted Areas - Workers are prohibited from loitering inside the building or on the sidewalks and plaza surrounding the building. Workers are prohibited from entering any floor or area they are not scheduled and approved to work on.
9. Professional Conduct - All workers are required to conduct themselves in a professional and courteous manner at all times.

The following activities are strictly prohibited:

- a. The use of offensive or abusive language.
 - b. Drinking, or eating in public areas.
 - c. Standing in lobbies, except to board an approved freight elevator.
 - d. The use of radios in areas which are accessible to or audible to the public.
 - e. Stealing.
 - f. The consumption, use, possession, distribution or sale of alcoholic beverages, illegal drugs or other mind or behavior altering substances.
 - g. Possession of firearms or explosives.
 - h. Physical, verbal or any other type of abuse or harassment.
10. Doorways – Fire Stairwell and Freight Lobby doors are not to be propped open or the locks and/or locksets altered in any way. No materials and ladders are to be left in or stored in the stairwells, freight lobbies or any mechanical rooms. Fire stairwells are **NOT** to be used for inter-floor travel.

11. Fireproofing on steel must be replaced if damaged or missing. Contact BUILDING OFFICE Building Management for inspection and approval before ceiling is installed. *Note: No asbestos in any form is permissible.*
12. All work performed that inconveniences or disturbs other floors must be scheduled before 7:00AM or after 7:00PM business days. The Building Office reserves the right to stop any work during normal working hours that causes a disturbance.
13. Workmen will be assigned to one toilet area that the General Contractor will be responsible for cleaning and stocking.
14. Any part of the Building damaged during alterations shall be repaired to the Building Office's satisfaction at contractor's expense.
15. The removal of construction debris must be coordinated. The pick-ups have to be completed on the street before 7:00AM or after 7:00PM business days.
16. Smoking Policy – No smoking is allowed anywhere on the building's property, including the plaza and all entry doors and the surrounding sidewalks.
17. Project Signs – No project signs or advertising of any kind will be permitted.
18. Hours of Work - The Tenants' rights to a peaceful and quiet workplace MUST BE THE PRIORITY AT ALL TIMES. The Building Office reserves the right to stop work deemed excessively noisy during work hours. Cutting, chopping, core drilling, shooting of hangers, must all be done after business hours. If work is stopped, it must be rescheduled for completion after hours and any elevator or security services required will be charged to the contractor. Additionally, at times after hours work may need to be rescheduled if it will impact a scheduled event.
19. Access - If a contractor requires afterhours access into an occupied office space to perform work per that Tenant's request, or requires access at any time to an adjoining suite to do work for that Tenant, e.g. install a plumbing drain in the floor which will require access to the space below, the contractor shall schedule and coordinate all work through the Building Office. A security guard is required for access at the Contractor's cost.

20. Electrical and IT Closet Lockouts or Access – Access to electrical and IT closets must be arranged by requesting an engineering escort (MOP Manager) through the Building Office at least two (2) business days in advance. The request must be approved in writing by the Chief Engineer. All closets are to be kept clean, free of excess materials and locked at all times. No tenant equipment is to be installed in the core IT closets including the lampston closet on each floor.

If a contractor / Project Manager require an electrical panel to be accessed or locked out for maintenance, they shall notify the Chief Engineer in writing at least fourteen (14) business days in advance of the required opening date. This will require an approved MOP prior to the designated Opening date. Upon receiving the Chief Engineer's approval, the contractor shall notify the electrician designated by the Chief Engineer, who at the Project's expense shall install a multi-part lockout adapter and a lock to that equipment. A tag will also be attached to the lockout naming who is performing the work. Upon completion of this work, the contractor shall request the electrician designated by the Chief Engineer to remove the lock and check the work. The Building Office reserves the right to reschedule a lockout request due to previously scheduled work.

21. Corridors – Walls / Doors – If temporary enclosures are required, they shall be constructed of drywall or fire-rated plywood and painted to match the corridors. The enclosure is to have a solid core door with an approved fire rating. Hollow metal or welded metal doorframes must be used for all entrance doors. Doors are to be equipped with a building standard lock set and keyed by the Building Locksmith at the contractor's cost. No padlocks or other locks shall be allowed.
22. Cutting and Patching - The Contractor shall be responsible for all cutting, fitting and patching that may be required to make its and its subcontractors' parts fit together properly.

The contractor shall not damage or endanger any portion of the work or the work of the Building Office or any separate contractor, by cutting, patching or otherwise altering any work. The contractor shall not cut or otherwise alter the work of the Building Office or any separate contractor except with the written consent of the Building Office and such separate contractor, as the case may be. The contractor shall not withhold from the Building Office, or any separate contractor, contractor's consent to cutting or otherwise altering the work.

In case sleeves or hangers are not in place in time, or are improperly placed, provided the Plans and Specifications therefore were available, the contractor shall be responsible at the contractor's expense for forming or drilling openings in the work where required and for any patching or corrective work necessary, subject to the approval thereof by the Building Office.

All cutting shall be done promptly and all repairs shall be made as necessary to leave the entire work area in good condition, including all cutting, fitting and drilling of masonry, concrete, metal, wood, plaster, and other materials as specified or required for proper assembly, fabrication, installation and completion of all work under the Contract Documents. This includes any patching that may be necessary.

Saw cutting, coring or trenching of the floor slabs is not permitted without prior written approval from the Building Owner and a written review from the Building Owner's structural engineer. Any costs associated with this review will be borne by the Tenant. Structural members shall not be cut except by prior written authority of the Building Office and/or their structural engineering consultant. Work done contrary to such authority is at the contractor's risk and will be subject to replacement at contractor's sole expense.

Permission to patch any areas or items of work shall not constitute a waiver of the consultant's right to require complete removal and replacement of said areas or items of work, if, in the Owner and/or the consultant's opinion, said patching does not satisfactorily restore quality and appearance of same.

All core walls will be patched to maintain code required rating at all times. Additionally, sufficient provisions must be made at all time to contain dust within construction areas.

23. Clear access in all aisles leading to all emergency stair exits must have a (36") clearance at all times.
24. When emergency exit lights are removed, it is imperative that temporary exit lighting remain above each exit door during any construction phase.
25. Contractors should never cover smoke detectors, this is illegal. All smoke detector bypass must be coordinated with fire command so that the fire safety director on duty can assign a fire watch to the floor during any smoke detector bypass via the Class "E" system. Any costs associated with this work shall be borne by the Tenant.
26. Other - The contractor shall coordinate its activities so that they do not interrupt or interfere with the normal operation of the property or other activities which may be occurring in the building. Contractor must provide walk off tack tile carpeting at freight elevator lobby and at entrance/exit to the work area so as not to track debris from one area of the building to another.

Keep pipe and duct openings closed by means of plugs or caps; cover all fixtures, equipment and apparatus to protect them against damage, both before and after installation.

All salvageable material and equipment, including but not necessarily limited to, electrical fixtures conduit, wiring, plumbing fixtures, heating units, piping, valves, etc. shall be removed and maintained in as good condition as possible and turned over to the Chief Engineer.

27. Communication with Building Staff –Contractor must provide the Building Office, with a copy to the Chief Engineer, of all material cut sheets, operation/maintenance manuals, warranties, Sign Offs and test and balance reports. Electrical contractors must provide electrical directories for all new electrical panels and updated directories for existing panels.

28. Debris - The contractor at all times shall keep the work area and the site, in a neat and orderly condition and free from accumulation of waste materials or rubbish caused by contractor's operations. The Contractor shall not, and shall not allow its subcontractors, to burn any trash at the site. The contractor shall require its subcontractors to clean and maintain their respective portions of the work area as required and as directed by the Building Office. All construction debris removal must be arranged with the Building Office and all waste and/or containers must be removed within one hour of delivery to the street.

Contractor shall require the subcontractor disposing of or causing the disposal of unsalvageable materials to submit an appropriate certificate to the effect that such unsalvageable material has been disposed of at an approved landfill in full conformity with all applicable Government Requirements (EPA, etc.). If the work area or, to the extent contractor is granted access, the site, is not maintained properly, the Building Office, upon 24 hours' (or such shorter periods as may be specified in any notice from a governmental authority with respect thereto) notice to contractor, may have any accumulations of waste materials or trash removed and charge the cost of such removal to the contractor.

29. Construction Clean Up - In order to make the work fit for occupancy for its intended purpose upon substantial completion, contractor shall remove, as soon as possible, all temporary facilities, waste materials, rubbish, supplies, tools, construction equipment, machinery and surplus materials from and about the work area and surrounding area.

The contractor shall perform the following final cleaning with respect to portions of the work area, which the Building Office may specify from time to time, and, for all trades, at substantial completion of the work:

- a. Remove temporary protections
- b. Remove grease, mastic adhesives, dust, dirt, stains, fingerprints, labels and other foreign materials from sight-exposed interior and exterior surfaces

- c. Wash and shine glazing and mirrors
 - d. Polish glossy surfaces to a clear shine
 - e. Ventilating Systems:
 - i. Clean permanent filters and replace disposable filters if units were operated during construction.
 - ii. Clean ducts, blowers and coils if units were operated during construction.
 - f. Any areas left unclean will be cleaned by the Building Office at the contractor's expense
30. Damage - Any items damaged by the contractor or its subcontractors shall be replaced and all surfaces which have been scratched or marred shall be refinished at the contractor's expense.
31. Keys - The contractor assumes all responsibility relating to financial losses for keys that have been lost and costs associated with the re-keying of areas accessible by any keys issued.

The contractor shall return all keys at the close of each day to the Engineering Department or will assume all costs related to the re-keying of all areas accessible by keys issued.

All doors **must** be master keyed. All locks must be keyed by the building locksmith.

General Contractor (GC) / Construction Manager (CM) to submit all door hardware schedule(s) and construction plan(s) to Building Management for review, comment and final approval. Upon submittal, GC/CM to allow 14 days for Building Management to process and review. Coordination with building locksmith is required and all specified building hardware is to be keyed to building standards, no exceptions will be made. Building standard hardware is to be Sargent mortise cylinder with the building assigned keyway. Contractor is to furnish and install all cylinders with three (3) keys per door opening.

32. Insurance - The contractor and subcontractors shall secure, pay for and maintain insurance in accordance with BUILDING OFFICE's requirements. Prior to the commencement of work, the contractor and all subcontractors shall furnish the Building Office with a current Certificate of Insurance evidencing said insurance. See Attachment for requirements and contact the Building Office at (646) 779-3000 for further details.
33. Licenses/Permits - All vendors, contractors and architects shall obtain, at their own cost, all licenses (including professional licenses), permits, certificates and authorization necessary to do business in all jurisdictions where any part of the work is to be performed. A copy of said permits, licenses, certifications and authorizations will be provided to the Building Office prior to starting any work.

34. Working Trades – At all times working trades, subcontractors and deliveries must maintain “**Labor Harmony.**”
35. Test & Balance – Testing and balancing is required for all new and retrofit mechanical systems. Contractor name must be submitted to Chief Engineer at start of project for approval. Any costs associated will be borne by the Tenant.
36. Temperature Control – The building designated controls vendor, currently Siemens, must be used exclusively for all temperature control work. Contractor is responsible for costs to have Siemens test the system as necessary upon completion of the work to verify integrity of the system and reporting back to the BMS. Any costs to repair same will be the responsibility of the Tenant build out costs.
37. Life Safety – The building designated fire alarm vendor, currently Fire Craft, must be used exclusively for all modification and testing of the Class E life safety system. Contractor is responsible for costs to have Fire Craft test and repair the system as necessary upon completion of the work to verify integrity of the system. Contractor shall submit the name of the proposed fire sprinkler and stand pipe systems subcontractor for pre-approval prior to the start of the job.

PROTECTION

1. All walls, floors and stairs doors in public areas subject to construction traffic shall be properly protected. Contractors will be responsible for the repair of any damage to the public common areas caused by the contractor during construction. All common area finishes including carpets, walls, ceilings, doors and door frames must be returned to the condition that existed prior to the start of construction. It is recommended that an inspection of the existing conditions and documentation of these conditions be completed prior to the start of the work. Plastic runners or Masonite must be laid and walk off mats must be installed inside entries prior to the start of the work
2. Disconnect electric power before demolition work commences. Install temporary lighting after MOP has been approved.
3. Protect radiator and induction units against dirt and dust. Induction units filters (screens) must be cleaned when construction work is finished.
4. Install shoe-wiping mats and/or adhesive sticky mats at all openings between public and construction areas, and maintain them as needed.
5. Dollies, hand trucks, and contractor’s lock boxes must have rubber wheels and bumpers.

6. Remove all construction debris and excess materials.
7. Any penetration through a wall or floor must be completely fire safe to Chief Engineer's satisfaction.
8. All mechanical/electrical rooms and Tele-com/Lamston closets are to be restored to conditions prior to commencement of work.

ELECTRICAL

1. General Contractor and Electrical vendor will submit MOPs before any and all work will start in the building.
2. Contact the Building Chief Engineer before commencing work and provide the Building Office with "Permit to Perform Electrical Work" from the Bureau of Electrical control.
3. Core boring of concrete must be pre-approved by the Building Office and will only be permitted to be performed before 7:00AM and after 7:00PM business days or on weekends.
4. Tag all branch circuit and feeder wiring at each box or panel. Tag shall indicate circuit numbers. A complete panel directory must be updated in each panel.
5. Clean electric closets of all debris and excess material. Reinstall panel covers and trims. Seal holes in slabs or walls with approved fire rated materials.
6. Remove wiring abandoned in floor ducts and ceilings including telephone wiring (back to source/riser). Vacuum all ducts and cap open floor outlets.
7. Provide the Building Office with final "Certificate of Approval" from the Bureau of Electrical Control.
8. Conference Rooms, Copy Rooms, Storage Rooms, Pantries, File Rooms, Library's, Private Restrooms and all perimeter offices are to have light sensors and wall switches.
9. All floor lighting will be put on the Building's Monitoring System or a timer installed, all at Tenant's cost.
10. Manual lighting override switches will be placed on the wall outside of the electric closets.
11. Provide occupancy sensors, vacancy sensors and daylight dimming controls for all lighting as required by NYC Energy Code.
12. All exposed circuit wiring shall be in EMT with steel set screw fittings only. No die cast fittings allowed.
13. Where permitted by code, type MC and AC cables, with insulated ground conductor shall be permitted where concealed and not subject to physical damage.
14. All Circuit wiring in EMT with steel set screw fittings only. No die cast fittings or BX allowed.

15. All circuit breakers to be bolt-on. No stab lock allowed.
16. All finished device plates to be P touched with panel and circuit designation.
17. All ECB testing should be scheduled after 7pm on weekdays.
18. All electrical installations shall be in compliance with applicable provisions of the New York City Electrical Code, the New York State Energy Code.
19. All transformers shall be high efficiency type and shall meet 2016 DOE requirements (TP1).
20. A listing of all proposed electrical loads (kW), by type (lighting, mechanical equipment, general power and UPS equipment) shall be provided for review and approval by the Owner's consulting engineers, currently Jaros, Baum & Bolles.
21. Service upgrades or the addition of any new upsized electrical main panels due to floor densification which would increase the Watts per Sq. Ft. (wpsf) must be reviewed and approved by the Owner's consulting engineers, currently Jaros, Baum & Bolles, at T e n a n t ' s expense, to ensure proper capacities are maintained along with originally designed redundancies. This would include review of incoming services, switchgear, bus duct risers and associated panels. To be paid for by the project. Third ("3rd") party testing of new equipment is also required and all costs associated will be borne by the Tenant.
22. Any changes or new connections to bus riser or feeders upstream of local power panels need to be tested by 3rd party vendor before placing into service.

PLUMBING

1. New plumbing to be copper pipe and shall originate on the same floor from the nearest wet column with proper access for maintenance.
2. New isolation (ball valves) valves to be installed & tagged, keeping building isolation valves if possible
3. All drain and vent lines in rest rooms to be replaced from deck to deck.
4. New Pressure Reducing Valves (PRV) to be installed replacing the existing in all restrooms, pantries or water coolers.
5. All plumbing fixtures shall be Toto (sinks, water closets and urinals). Wall-mounted flushometer toilet, mod # CT708EV(G) for 1.28 gpf and mod # SC534 seat, with EcoPower flush valve mod # TET1LN32#CP, Toto mod # UT105UVG for 0.125 gpf urinals with mod#TEU2UN11#SS EcoPower Flushometer Valve, and Toto Helix EcoPower Faucet mod # TEC5LC10 for sinks or approved equals. Are we changing to Sloan after the pressure problems on 30?
6. Concealed open indirect drain traps not permitted.

7. Insulate water supply pipes to prevent sweating or heat loss.
8. Waste line shall be properly pitched to prevent “trapped” water.
9. Install waste line connections with long turn or 45 degrees “Y” fittings.
10. Retain existing clean-out connections and provide clean-out connection at new fittings.
11. All holes bored in slab or chopped in walls will be sealed with approved material and made watertight.
12. All abandoned piping (water, waste and vent lines) must be removed up to the building main.
13. Water sources generated from pantries, kitchens, restrooms, HVAC equipment, etc. cannot be above critical areas such as Data Centers, LAN/ UPS/ PDU Rooms, etc.
14. Water sources in pantries coming from the buildings water source to the equipment (water coolers, coffee makers, ice machines) etc.: must be either copper pipe or copper tubing. NO poly tubing will be permitted.
15. Pantries, kitchens, with hot water storage tanks must be in a pan with a leak detector and a solenoid shut off valve, restrooms, mechanical equipment rooms, etc. must have floor drains and also a leak detector with a solenoid shut off valve, at contractor’s cost.
16. Pantries to have a floor drain in the room.
17. All Hydrostatics and Air Balancing tests must be witnessed and signed off by building engineers.
18. Tenant must install new sub meter for any water used other than restrooms. The type of meter must be pre-approved by the Building Office and tied into the Building’s meter network.

HEATING, VENTILATION, AIR CONDITIONING

1. Install/repair fire-smoke dampers in ductwork where ducts penetrate demising walls.
2. Piping which penetrated demising walls shall be installed with an appropriate size sleeve and sleeve properly insulate with fire resistant materials.
3. Install vibration eliminators on HVAC equipment.
4. Remove abandoned ductwork, conduit or piping from hung ceiling areas.
5. Construct curb around floor mounted air conditioner units with proper waterproofing method employed. All units to have a leak detector and solenoid shut off valve. **Leak detection must report back to the base building BMS system and will be the responsibility of the tenant to provide through the building designated controls vendor, currently Siemens.**

6. Install isolation dampers on main air supply and return ductwork and tie controls to building BMS system. Vendor will also supply construction filters on return air stubs prior to demolition and will be responsible for maintaining said filters throughout the construction phase of the project.
7. V.A.V boxes can be either Trane model VARITRANE or Titus model DESV and shall not impose more than 0.2 inch w.g static pressure on the building systems. **These units must report back to the base building BMS system and will be the responsibility of the tenant to provide through the building designated controls vendor, currently Siemens.**
8. All HVAC controls to be BACnet DDC type and all controls for the perimeter induction units shall be contained within the individual units. These controls must report back to the base building BMS system and will be the responsibility of the tenant to provide through the building designated controls vendor, currently Siemens.
9. All work associated with induction unit additions or replacements and/or thermostatic rezoning must be approved by the building office prior to commencement of work and must be allowed 14 days for approval. Once approved all costs associated with this work will be the responsibility of the tenant. Tenant must seal and protect all induction units prior to demolition and/or construction. All units to be cleaned and filters replaced upon completion of construction as well. All furniture and fixtures shall not be placed closer than 12 inches from the induction units.
10. Interior ductwork shall be tested for leakage per SCACNA standards and witnessed by a building representative.
11. All hydrostatic and air balancing tests must be witnessed and signed off on by the building engineers.
12. Interior air balancing report and a perimeter control survey must be done and reports given to the Building Office.
13. All air balancing will be done on off hours unless otherwise instructed by the Building Office/Engineering Dept.
14. Tenant shall employ the services of the base building water treatment contractor to flush clean and fill any tenant installed HVAC piping systems prior to connection to the base building system

AUXILIARY AIR CONDITIONING UNITS

1. Location of air-cooled condensing equipment must be approved by Building Office.
2. Insulate duct work and condensate lines to prevent sweating.
3. Discharge condensate into sink area or floor drain as approved by Chief Engineer.
4. Install proper isolation pads or vibration eliminators on supplementary air conditioning units and associated pumps.
5. All piping/fittings for a/c units must pass a hydrostatic test, pressures to be determined by floor location in building. This will be 1.5 (1 ½) times the standing pressure or 250lbs (whichever is greater) for 2 hours.

6. All piping/fittings will be chemically cleaned.
7. All piping/fittings connections must be welded or brazed – no soft soldered joints.
8. All units will be placed in a pan with a leak detector which will report back to the building BMS system at the sole cost of the tenant.
9. All units will have solenoid valves on both the supply and return condenser water lines that will shut the unit down upon a leak being detected.
10. Units shall be selected for 88 degrees EWT at a 15 degrees delta T. Units shall be capable of accepting 45 degree entering water temperature and shall be provided with two-way condenser water control valves arranged to close when the unit is off.
11. Condenser water serving units above the 11th floor shall be provided from the building condenser water system via new wet taps into the existing risers. The condenser water is pumped with approximately 20 psi differential at the risers.
12. Chilled water serving units below the 11th floor shall be provided from the building chilled water system via wet taps into the existing risers. This chilled water is pumped with approximately 25 psi differential at the risers.
13. Addition of any new auxiliary units connected to either CHW or CW must be reviewed and approved by JB&B Engineering to ensure proper capacities are maintained along with originally designed redundancies. All associated costs to be borne by the tenant or General Contractor.
14. Tenant is responsible to furnish and install sub-meters for supplementary HVAC units which shall be tied into the building's meter network at the cost of the tenant.

FIRE PROTECTION:

1. Sprinkler system shall not be interrupted or shutdown without the Chief Engineer's permission. FSR required 24 hours in advance.
2. All fire dampers and isolation dampers must remain or be replaced. Fire dampers **cannot** be Ruskin Series MA-200 due to manufacturer recall.
3. All device Class E work must be performed with the building's Class E vendor, presently Firecraft. Work must be performed after 7:00PM and before 7:00AM business days or on weekends; **and** only after securing proper authorization from the Building Office. A minimum five (5) business day's advance notice to the Building Office is required. A Building Engines work request must be placed for a fireguard/fire watch and a charge for a fire watch will apply to the tenant or GC. All sprinkler and temporary lines to be hydrostatic tested. (Sample of the "HOT Work Permit" will be attached)
4. Tenant must coordinate all modification to the fire alarm system with the building's fire alarm vendor to confirm adequate system capacities at the data gathering points (DGP's) and the notification device power supplies.

5. All fire alarm system modifications shall be reviewed, inspected and approved by the FDNY.
6. Exit lights must be posted above all exit doors and they must be illuminated.
7. All alteration works to existing sprinkler system as shown on the plan shall be done after hours unless signed approval is granted for other time periods by the Building Office.
8. Sprinkler heads shall be as underwriter's laboratories listed approved of ordinary degree rating except as otherwise noted of 165°F and shall be cast brass fusible link spray type with ½" discharge orifice.
9. Concealed sprinkler heads as indicated on the drawing shall be reliable model G4 concealed with white cover plate (N.Y.C.B.S. & A/No. 587-75-SA).
10. Sprinkler cover plates shall be provided to existing heads which had none at tenants cost.
11. Hangers, brackets, beam clamps, clips, inserts and mounting devices to support piping shall be installed in accordance with the NFPA Pamphlet No. 13.
12. Hangers shall be secured directly to the building structure in an approved manner.
13. A temporary loop system will be installed before deactivating the existing sprinkler system on the floor. Contact the building's Chief Engineer and Fire Safety Director before disassembling the existing system. All floors that will be occupied or partially occupied during construction must maintain full sprinkler coverage at all times. Temporary loops are not permitted on occupied or partially occupied floors unless approved by the FDNY.
14. All welding, cutting, soldering, flame or smoke producing work will not commence until the building's Fire Command Station Operator and Chief Engineer have been informed and have verified the appropriate fire alarm points/zones are locked out – Including sprinkler work. At the end of the work day, the points/zones must be restored and a fire watch should remain on site for a period of 4 hours after work has been completed, at the cost of Contractor.
15. All welding shall be performed after 7pm weekdays or on weekends. Welding shall be performed only by persons having a valid New Certificate of Fitness for welding. During the welding operations there must be a person, in the capacity of fire watch, equipped with a fire extinguisher, smoke eater and protective blankets.
16. All device Class E work must be performed with the building's Class E vendor, currently Firecraft.
17. The entire sprinkler system shall be pressure tested immediately following the completion of alteration works. Air test shall be conducted at 50 psi prior to the hydrostatic test to assure that the piping system is tight. Any leakage found shall be fixed and system pressure test shall be repeated after the repair has been made. The construction manager shall give at least 48 hours' notice of a forthcoming pressure test to the building office.
18. A hydrostatic test must be done and overseen by the building's engineering department of the newly installed sprinkler piping and a report must be given to the building office. **This test will be for 2 hours at a pressure of 250 lbs. or 1.5 (1 ½) times normal pressure, whichever is greater and must have zero tolerance. Any leakage found shall be fixed and system pressure test shall be repeated.** All testing and repairs are the responsibility of the tenant. **NOTE: 3 heads added or relocated requires just a working pressure test, 4 – 9 heads requires just an air test and 10 or more heads requires a hydrostatic test.**

19. All manual pull stations must have an approved protective cover.
20. All floors must have the approved glow in the dark signs that comply with Local Law 26 and building standard. Signs are to include stair location plan signs, life safety emergency team ID signs (photo board), emergency contact list signs, fire stair door signs (occupancy side) and directional orientation signs.
21. Fire extinguishers are to be furnished and installed in all copy rooms, pantries, kitchens, etc. Tenant is responsible for testing and charging extinguishers as required by NYFD.
22. Fire stopping all floor penetrations must be sealed with a fire barrier product.
23. Temporary manual pull stations must be provided and relocated off the core walls to protect from damage during construction.
24. All oxygen/acetylene tanks are to be removed from the building after each use, Tanks are not permitted to be stored in the building after contractors have left the building. Contractor must remove from the building on a daily basis via the freight elevators. FDNY will be contacted for removal if these tanks are not removed and incur possible summons to the contractor, NO EXCEPTIONS!

Concealed sprinkler heads as indicated on the drawing shall be reliable model G4 concealed, with white cover plate (N.Y.C. B.S. & A/ No. 587-75-SA).

INFORMATION TECHNOLOGY:

1. Core boring of concrete for low voltage riser cabling sleeves and conduit must be pre-approved by the Building Office and will only be permitted to be performed before 7:00am and after 7:00pm on business days or on weekends.
2. All new low voltage wiring and/or conduit risers shall be routed within the Tenant's demised premises. Routing of such equipment in spaces, core areas, central MER's, etc., which are not part of the Tenant's demised space, must be approved in writing by the landlord. The placement of any Tenant equipment (or carrier related support equipment for the Tenant) in spaces, core areas, central MER's, etc., which are not part of the Tenant's demised space is not permitted.
3. All risers that are permitted by the Landlord to be routed outside of the Tenant demised premises must be positioned so as to not interfere with access to existing Landlord or other tenant systems, nor to be an impediment to the use of un-used equipment and/or riser space that could be used in the future.
4. The use of the perimeter induction system as a wire way is prohibited. Use of the system for tenant low voltage system distribution must be obtained in writing from the Landlord and may require that the Tenant demonstrate (via the induction unit vendor and/or building engineers) that the operation of this system is not adversely effected by the Tenant distribution.
5. Clean all telephone and/or technology riser closets of all debris and excess material. All holes in slabs or walls are to be sealed with approved fire rated materials.
6. Remove all low voltage wiring that has been abandoned in floor ducts and ceilings back to source. Tenant must vacuum all ducts and cap open floor outlets as well.
7. All low voltage cabling installation work shall be performed by an approved base building contractor.

8. All low voltage wiring installation shall be in compliance with applicable provisions of the New York City Electrical Code.

ANTENNA SYSTEMS:

1. All Tenant antenna systems must be approved for use by Landlord and must only provide RF coverage within Tenant's demised premises.
2. Where Landlord believes that a Tenant's antenna system is interfering with a base building or another tenant's wireless systems, the Tenant will be required to turn "off" their wireless system until a Landlord accepted RF Engineer can demonstrate (on behalf of the Tenant) that the Tenant's system is not the cause of interference and any other system problem.
3. Core boring of concrete for low voltage riser cabling sleeves and conduit must be pre-approved by the building office and will only be permitted to be performed before 7:00am and after 7:00pm business days or on weekends.
4. All new Tenant low voltage wiring and/or conduit risers shall be routed within the Tenant's demised premises. Routing of such equipment or the placement of any Tenant (or carrier related support equipment for the Tenant) in spaces, core areas, central NER's etc., which are not part of the Tenant's demised space must be approved in writing from the Landlord.
5. All antenna system risers that are permitted by the Landlord to be routed outside of the Tenant demised premises must be positioned so as to not interfere with access to existing Landlord or other tenant systems nor to be an impediment to the use of un-used equipment and/or riser space that could be utilized in the future.
6. All antenna system installation work shall be performed by an approved base building contractor.
7. All antenna system wiring and equipment installation shall be in compliance with applicable provisions of the New York City Electrical Code.

FURNITURE/ FURNISHINGS:

1. Glass doors must have "distraction markings" installed.
2. Entrance glass doors must have directional indicators ("PUSH" and "PULL").
3. General Contractor/ Construction Manager to submit all door hardware schedule(s) and construction plan(s) to Building Management for review, comment and final approval. Coordination with building Locksmith is required. All specified door hardware is to be keyed per building standards. No exceptions will be made. Building Standard hardware includes Sargent mortise cylinders with the building Locksmith assigned Keyway. Contractor is to furnish and install all cylinder(s) with three (3) Keys per door opening.
4. All furniture must have a minimum of 12 inches of clearance from the face of the convector/ window units to allow for maintenance.
5. All walls built over convector/ window units must have a reveal large enough to allow for the removal of covers for maintenance.

ADVANCE APPROVAL REQUIREMENTS

1. Deliveries - All major deliveries requiring the use of a freight elevator must be scheduled through the Building Office at least 7 days in advance. Such major deliveries requiring dedicated freight elevator time will be scheduled after normal business hours on a "first come-first serve" basis. (Normal business hours are 7:00 a.m. - 5:00 p.m., weekdays). No materials may be delivered through the main entrances of the buildings. Contractors are required to furnish their own lift trucks and labor. All deliveries must be made through the Liberty Street Entrance.

All deliveries shall enter the building via the loading dock area on Liberty Street. The use of elevator operators outside their standard operating hours will be chargeable to the Contractor. Contractor must submit to the Building Office a schedule of dates of any materials being shipped or received to the building. General Contractor will submit MSDS on all materials prior to delivery into the building.

2. Freight Elevator Scheduling - Dedicated freight elevator service may be scheduled in accordance with the following:
 - a. 48 Hours in advance of the scheduled date and time, request will be submitted to the Building Office by Contractor and will contain the requested day and time, the location and description of work.
3. Interruptions of Utilities, Fire Alarm & Sprinkler System – The interruption of utilities (electricity, water, plumbing, HVAC) or tenant services is not permitted without advance coordination and written approval of the Chief Engineer. The fire annunciation system may be shut down for certain work (soldering, welding, etc.) with written permission of the Chief Engineer and Fire Safety Director. All utilities and tenant services must be put back in service at the end of each day.
4. Sprinkler System Shut Downs – A shut down or drain down of the sprinkler systems will be required for all work above the ceiling or temporary loop. All sprinkler shut downs or drain down will require fire watch. Fourteen 48 Hours advance written notice is needed for all shutdowns.
5. Any work affecting the Class “E”, sprinkler or sprinkler systems must be performed after 7:00PM and before 7:00AM business days or on weekends; **and** only after securing proper authorization from the Building Office. A minimum 24-hour advance notice to the Building Office is required. A charge for a fire watch will apply. All sprinkler and temporary lines to be hydrostatic tested. (Sample of the “HOT Work Permit” will be attached). If the possibility exists that a Class “E” system device may be falsely triggered, the Building Office must be notified. Any costs incurred due to falsely tripped devices will be borne by the contractor.

6. Hot Work (Cutting, Brazing, Welding and Grinding) – All hot work to be done will be coordinated through the Fire Safety Manager **and** will only be allowed to be done after business hours and/or on weekends. A permit system is in place and all instructions listed on the permit **MUST BE FOLLOWED**. The permit issued by the Fire Safety Manager is good for one day’s work and must be returned at the end of the day.

7. The contractor shall engage the Building’s Fire Guards to provide a fire watch during all open flame activities. This shall be a second person equipped with not less than a ten pound dry chemical or a two and one half (2 ½) gallon water fire extinguisher and protective blankets. In computer areas, not less than a ten (10) pound Carbon Dioxide fire extinguisher shall be provided.
 - a. A welding and or burning permit must be given on a daily basis to the Fire Safety Office on the Lobby level for any welding or cutting to be done that night. The Fire Safety office (646) 779-3064 is to be contacted prior to the start of welding **and** when finished.

 - b. Building System Shut Down - If a Contractor requires a mechanical/plumbing/fire protection system shut down and/or electrical lockout to complete work on the building's system, or tenant's system, he must submit a completed **MOP** in advance, for approval by the Chief Engineer and Building Office. Lead times are based on risk and levels of impact associated with the work and can be up to 60 days. Upon the written approval, the work can proceed. The Building Office reserves the right to reject and reschedule the request if it conflicts with other previously scheduled work. The Project Manager will be advised of approvals or disapprovals via email. However, Contractors are required to contact the Engineering Department at (646) 779-3059 prior to the start of work to confirm the system is shut down. The shut down costs will be charged to the specific tenant.

8. Contractor shall submit the following information to the Building Management office:
 - a. Certificate of Insurance for all trades. (Compliant with BUILDING OFFICE requirements)
(See Appendix 2 for Sample COI)
 - b. List of subcontractors for approval.
 - c. Copy of the New York City Building Notice Number. (Permits)
 - d. Copies of all Certificates (i.e. Department of Water, Supply, Gas, Electric, and fire Underwriters).
 - e. Within thirty (30) days of a floor completion, the General Contractor will submit a complete set of “As Built” drawings, CADD’s, and all applicable permits and sign-offs to the Building Office.

DELIVERY AND TRANSPORTATION OF MATERIALS

1. The Building Office will provide no materials, supplies, tools, ladders or equipment. The contractor must provide all such items.
2. All contractors/subcontractors will use rubber wheeled carts when moving material through the Building or removing trash from the Building.
3. Construction materials shall be delivered to the job in proper containers and stored in the designated work area. Materials must not be stored in public areas. (I.e. freight lobbies, loading platforms and public corridors).
4. Fire exits shall be kept clear and accessible at all times.
5. All contractors shall keep and maintain a fire extinguishers on construction site at all times. All fire extinguishers must be supplied by the contractors. ABC (All Purpose) type extinguishers shall be used.
6. The General Contractor/subcontractor may only use assigned freight elevators and must allow time for normal day-to-day business to continue without any disruption.
7. The General Contactor/subcontractor is responsible for vacuuming all debris from tracks and landing for freight elevators and dock levelers. **Sweeping debris into elevator hoist ways or under levelers is not acceptable and may cause the equipment to shut down and/or malfunction.** The contractor assumes all responsibility relating to financial losses for repairs to elevator equipment and levelers related to the failure to adhere to this provision.
8. No materials will be stored outside the assigned area. The contractor and subcontractors are responsible for keeping access to the storage area free and clear.
9. All loads onto freight elevators within weight restrictions of the individual elevator centered in cab and loaded slowly to prevent freight car from over-adjusting and potentially malfunctioning and/or shutting down. Weight restrictions can be obtained from the Building Office.
10. All labors, contractors, subcontractors, etc. loading material and/or equipment onto the freight cars must comply with the instructions of the elevator operator for loading onto and off of the freight cars – at all times.

All contractors and subcontractors performing work at 28 Liberty Street are required to forward a Certificate of Insurance meeting the guidelines on the sample certificate of insurance that follows. A copy must be sent via email to the Building Office at **28libertybuildingoffice@CBRE.com** before any work can commence.

ELEVATOR SCHEDULING REQUEST

Original Request

Requestor Name: _____

Tenant / Contractor Name: _____

Original Request Date: _____ Revised: _____

Project Number: _____ Work Order Number: _____

Subcontractor: _____

Date Requested: _____

Time Requested: _____

Materials Being Delivered:

Office of the Buildings' Approval: _____ Security: _____

Advanced notification and approval required

28 LIBERTY STREET
CONSTRUCTION/ALTERATION ACTIVITY CLASS E REQUIREMENTS

ACTIVITY	CLASS E OFFLINE	SMOKES OFFLINE	FIRE WATCH*	FIRE GUARD*
Sprinkler or Standpipe drain down	Yes	Yes	Yes	Yes
Burning, welding, cutting, sweating, brazing, grinding**	Yes	Yes	Yes	Yes
Demolition	Yes	Yes	Yes	No
Construction	Yes	Yes	No	No
Chopping	Yes	Yes	No	No
Drilling	Yes	Yes	No	No
Spraying	Yes	Yes	No	No
Sanding	Yes	Yes	No	No
Pre-action system off-line	Yes	Yes	Yes	Yes

*Fire Watch must be provided by contracting with the Building's contractor and will be charged to General Contractor.

** Hot Work Permit must be provided.

All guidelines indicated will be reviewed on a case by case basis. The Building Office reserves the right to request additional protection as they feel fit.

WORK PERMIT

For "Sensitive" Or "Potentially Hazardous" Work

(POST "COPY" IN WORK AREA)

PART #1: General Information (To Be Completed by Contractor Performing Work)

DATE: _____ START TIME: _____ EST. END TIME: _____

LOCATION OF WORK:

BRIEF SCOPE OF WORK: _____

PERSON PERFORMING WORK: _____ COMPANY: _____

CONTACT NO: _____

PART #2: Work Area Inspection (To Be Completed By Property Manager or Designated Representative)

- Burning, cutting and welding equipment is in good repair.
- Floor has been swept clean of loose combustibles within 35 feet radius of work area.
- Walls, floor openings, and readily ignitable combustibles within 35 foot radius of work area-which may be subjected to ignition sources, have been covered.
- Combustibles have been removed away from opposite sides of walls or ceiling.
- A fire extinguisher, in good working order and properly tagged, is at the work site.
- A Fire Watch is provided during and four (4) hours after work completion.
- Special hazards/precautions/safety needs required? _____
- Possible affected areas/personnel have been notified? _____
- Are all smoke detectors in work area capped off and Security/Central Station/Fire Safety Director notified? _____
- Will work cause excessive or noticeable dust, smoke or fumes? _____

Nearest Fire Alarm Pull Station: _____ Emergency Notification#: _____

PLEASE NOTE: Re-inspection whenever work is discontinued for more than one hour.

The work area and the work to be performed for this permit have been discussed and inspected by the following people, prior to the start of the work:

1. Person Performing Work: _____ Date: _____

(Signature)

2. Fire Watch: _____ Date: _____

(Signature)

3. Person Approving Work Permit: _____ Date: _____

(Signature)

PART #3: Final Check – Job Completion (To Be Completed By Person Issuing Permit)

- Work areas and all adjacent areas inspected? -No evidence of fire? -Caps removed from detectors?
- Facilities/Security/Central Station/Fire Safety Director notified of job completion? -All equipment returned?

Signature of Person Completing Final Inspection

Time Inspected

Permit Limitation: This work permit authorizes a single work activity and is valid on the
calendar day for which it is issued. Permit to be maintained in Facilities Work Permit Log files. Copy to Fire Life Safety Director.

INSURANCE REQUIREMENTS

ACORD™						CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YY)	
PRODUCER			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.						
Producer			INSURERS AFFORDING COVERAGE						
INSURED			INSURER A		Insurer A				
			INSURER B		Insurer B				
Insured (Contractor), Address			INSURER C						
			INSURER D						
			INSURER E						
THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OF MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.									
INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLIC EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS				
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Waiver of Subrogation GENERAL AGGREGATE LIMIT APPLIES PER <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC Waiver can be stated in the description box below.	XXXXXXXXXXXX	XX/XX/XXXX	XX/XX/XXXX	EACH OCCURRENCE	\$ 3,000,000			
					FIRE DAMAGE (Any one fire)	\$ 100,000			
					MED EXP (Any one person)	\$ 10,000			
					PERSONAL & ADV INJURY	\$ 3,000,000			
					GENERAL AGGREGATE	\$ 3,000,000			
					PRODUCTS-COMP/OP AGG	\$ 3,000,000			
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> Waiver of Subrogation Waiver can be stated in the description box below.	XXXXXXXXXXXX	XX/XX/XXXX	XX/XX/XXXX	COMBINED SINGLE LIMIT (Ea accident)	\$ 3,000,000			
					BODILY INJURY (Per person)	\$			
					BODILY INJURY (Per accident)	\$			
					PROPERTY DAMAGE (Per accident)	\$			
	COMMERCIAL BLANKET BOND <input checked="" type="checkbox"/>				BLANKET BOND	\$			
A	EXCESS LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$	XXXXXXXXXXXX	XX/XX/XXXX	XX/XX/XXXX	EACH OCCURRENCE	\$ 10,000,000			
					AGGREGATE	\$			
B	WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY <input checked="" type="checkbox"/>	XXXXXXXXXXXX	XX/XX/XXXX	XX/XX/XXXX	<input checked="" type="checkbox"/> WC STATUS <input type="checkbox"/> OTHER TORY LIMITS				
					E.L. EACH ACCIDENT	\$ 3,000,000			
					E.L.DISEASE-EA EMPLOYEE	\$ 3,000,000			
					E.L.DISEASE-POLICY LIMIT	\$ 3,000,000			
	OTHER								
DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIALPROVISIONS									
<p>4 → "CBRE, Inc., Summit Glory, LLC, Fosun Property Holdings Limited and its subsidiaries, directors, officers, employees, and agents, as their interest may appear," shall be named as additional insureds with regard to Commercial General Liability and Automobile Liability Insurance. The Commercial General Liability Policy, Automobile Liability Policy, and Worker's Compensation/Employer's Liability Policy contain a waiver of subrogation against the party listed as additional insured, except to the extent any of such parties is finally determined to be solely liable (or the waiver of subrogation can be shown under the "type of insurance" section of the certificate.) Contractor's insurance shall be primary and all insurance carried by CBRE, Inc., Summit Glory, LLC and Fosun Property Holdings Limited is strictly excess and secondary insurance and shall not contribute with Contractor's insurance for Contractor's insurance shall be primary and non-contributory to CBRE, Inc., Summit Glory, LLC and Fosun Property Holdings Limited's insurance.</p>									
CERTIFICATE HOLDER/ADDITIONAL INSURED, INSURED LETTER					CANCELLATION				
6 → Summit Glory LLC, CBRE, Inc. and all related entities 28 Liberty Street New York, NY 10005					7 → SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.				
					AUTHORIZED REPRESENTATIVE				
A "good" or "acceptable" COI must have the following:									
1. Policies are in effect (i.e., are not expired). 2. Limits meet or exceed Agreement. The Employer's Liability Insurance, Commercial Liability Insurance, & Auto Liability Insurance requirements may be satisfied through an Umbrella/Excess Liability Policy. 3. Additional insured phrase matches the Sample COI exactly.					4. Certifies Waiver of Subrogation. (Either of the 2 ways shown on the Sample COI.) 5. Certifies Primary Non-Contributory. (Either of the 2 ways shown on the Sample COI.) 6. CBRE Named as Certificate Holder 7 30-Day Cancellation (we will allow 10-day cancel for non-payment.)				

SPRINKLER DRAIN DOWN REQUEST

28 Liberty Street

Must be approved 2 business days prior to drain down

Start Date:	Time Start:	End Date:	End Time:
Project:		Location:	
Project Manager:		Cost Center:	
Telephone # :		Cell Phone #:	

We will require a drain down of (please list the floors and check off the box that pertains to this work).

Floor	Fire <u>Sprinkler</u>	Smoke <u>Heads</u>	Fire <u>Standpipe</u>	Scope	Other

Comments :	
Contractor	Telephone #:
Contractor Name	Cell Phone #:
Building Office Approval :	Date:
Chief Engineer Approval:	Date:
Fire Safety Director Approval	Date:
Contractor Approval:	
Low Rise Freight Car	High Rise Freight Car

- | | | | | |
|--|--|--|-------------------------------------|----------------------------------|
| <input type="checkbox"/> Building Office | <input type="checkbox"/> Engineering | <input type="checkbox"/> Fire Safety | <input type="checkbox"/> Contractor | <input type="checkbox"/> Freight |
| <input type="checkbox"/> Security | <input type="checkbox"/> Project Manager | <input type="checkbox"/> Project files | <input type="checkbox"/> other | |

Appendix 1: Building Information

Building Information

FREIGHT ELEVATORS:

28 Liberty Street is serviced with three (3) freight elevators that run from level 5B to the 60th floor; and, are available from 7:00am to 6:00pm, Monday to Friday. After hour freight service request shall be arranged 7 days in advance. The freight elevator ramp is located through the double doors on Liberty Street (between William and Nassau Streets).

The sizes of the freight elevator cars at 28 Liberty Street are:

#35 Car	Car Height	10 ft 4 in	Car Depth	7 ft 4 1/2 in
	Car Width	5 ft 4 1/2 in	Door Height	8 ft 8 in
	Door Width	3 ft 6 in	Capacity	3,500 pounds
#36 Car	Car Height	10 ft 4 in	Car Depth	7 ft 4 1/2 in
	Car Width	5 ft 10 1/2 in	Door Height	8 ft 8 in
	Door Width	4 feet	Capacity	4,000 pounds
#37 Car	Car Height	10 ft 4 in	Car Depth	7 ft 4 1/2 in
	Car Width	7 ft 1/2 in	Door Height	8 ft 8 in
	Door Width	5 ft	Capacity	5,000 pounds

LOADING DOCK ENTRANCE:

The loading dock entrance clearance (Liberty Street) is 10' 6". Clearance *is mandatory*.

No trucks may idle with engines running while in the dock.

The Loading dock hours are from 7:00 AM to 6:00 PM, Monday to Friday. All major deliveries shall be arranged with the Building Office. Any after hour deliveries shall be arranged 7 days in advance.

ARCHITECTURAL / STRUCTURAL

Basic Construction:	Structural steel
Building Lobby:	Glass, travertine, Juparana
Curtain Wall:	Aluminum exterior panels with tinted non-reflective blue/green glazing 1/4" thick
Column Spacing:	29 feet on center for exterior columns, 31 feet on center for east and west end interior
Floor Load:	50#/FT2
Structural Fireproofing:	Spray on A.C.M.

Floor System(s)

Raised Floor:	Yes with carpet tiles
Slab to Slab Height:	12 ft.; 59, 60 and MER are 15 ft.
Building Standard Interior Partitions:	Metal stud with gypsum board, Hermann Miller, Hausman
Building Standard Ceilings:	Armstrong acoustical 14.5" x 14.5", 12" x 12" and 2 x 2.

Air Conditioning System(s)

Supplemental Systems Type:	Condenser water
H.V.A.C. Control Systems Type:	Electric, Pneumatic
Manufacturer:	Siemens

B.M.S.: Yes
Manufacturer: Siemens

FIRE LIFE SAFETY SYSTEMS

Sprinklers: All areas sprinklered

Standpipes: Located in stairs SE1 and NW4

House Tank(s) Capacity: 51st Floor 3,500 gallons, 11th floor
3,500 gallons.

House Tank Location(s): 51 and 11 sprinkler/ standpipe

CLASS "B" SYSTEMS

Manufacturer: Cerebus Pyrotronics Model #5000

Sub. System(s): **Pyrotronics and Notifier**

Location(s): **Plaza Floor/Ground floor – Fire Safety
Department**

ELECTRICAL

Lighting Control Systems: Yes, BMS

Manufacturer: Wattstoppers Controls

Floor Distribution System: Floor cell system

Methods of Procedures

Standard Template Form

Appendix 2: Method of Procedures (M.O.P)

Instructions:

- A MOP (Methods of Procedures) document is required for designated work.
- Use the tab key or mouse to navigate from field to field.
- When using attachments or supplemental documentation, please reference those documents in the applicable MOP Section.
- Electronic versions of completed MOP's should be retained on file for future use.
- Switching Tags:** for work activity in this MOP associated with switch or valve alignment changes, Switching Tags are to be used to validate that electrical or mechanical equipment is properly configured to support the planned activity.

Section 1: Title Page

General Information							
MOP Title:							
Activity Type	Select One			Comments			
Pull The Plug Test							
Major Maint. (Power Down)							
Planned Maintenance							
Corrective Maintenance							
Predictive Maintenance							
Emergency Repair							
System Testing							
Installation							
Housekeeping							
Commissioning							
Demolition							
Other (Describe)							
MOP Number:				Are there attachments?	Yes No		
MOP Manager							
Site / Building Name:	28 Liberty St.						
Address:	28 Liberty St.			City:	New York	ST:	NY
Start Date of Work Period (mm/dd/yyyy):			Start Time of Work Period (local – hh:mm, AM or PM):				
End Date of Work Period (mm/dd/yyyy):			End Time of Work Period (local – hh:mm, AM or PM):				
Work Area:							

Attachments	
Attachment 1:	
Attachment 2:	
Attachment 3:	
Attachment 4:	
Attachment 5:	
Attachment 6:	
Attachment 7:	
Attachment 8:	
Attachment 9:	
Attachment 10:	

Contact Information			
Point of Contact	Name	Emergency Contact Number	Mobile Phone
MOP Author:			
Chief Engineer:			
MOP Manager:			
General Manager:			
Sr. Real Estate Manager:			
Real Estate Manager:			
Project Manager:			
Asst. Chief Engineer:			
Foreman			
Tenant #1 Contact:			
Tenant #2 Contact:			
Tenant #3 Contact:			
Director::			
Director:			
Other:			
Other:			
Other:			
Other:			

Section 2. Purpose & Scope

Discuss, in as much detail as necessary, the purpose, reasons and expected outcomes for the planned work including the equipment and systems that will be affected.

Number each risk and describe all apparent risks caused by the work effort described in the MOP.			
Risk No.	Risk Description	Back-out Plan	Initial When Reviewed
	Human error	<p>POTENTIAL RISK: A mistake can cause worker injury, a loss of service, or a significant delay in the performance of the assigned task.</p> <p>RISK MITIGATION: To limit this risk, MOP manager will prepare with a MOP review meeting with all on-site personnel before any work begins. The MOP manager and all staff and vendors will follow the MOP's work scope. BACK-OUT: Upon discovery or notification of an error, MOP manager will notify Chief Engineer & SREM or REM.</p>	

	<p>Loss of service because of tripped breaker</p>	<p>POTENTIAL RISK: A risk with this work is the chance that while working in or around critical equipment, electrical switches, or breakers, an energized circuit breakers or switch could trip or be turned off. A tripped breaker/switch will cause of loss of service to the IT and/or MEPF equipment connected to that breaker.</p> <p>RISK MITIGATION: Staff will exercise caution while working around electrical equipment. A review of the MOP's work scope and specific work areas will be conducted by the MOP manger. The MOP manager will stop any work practices deemed slipshod.</p> <p>BACK-OUT: BACK-OUT: Upon discovery or notification of an error, MOP manager will notify Chief Engineer & SREM or REM.</p>	
	<p>Worker injury - Arc flash is possible when opening up or closing panels and opening and closing breakers.</p>	<p>POTENTIAL RISK: An arc flash can cause serious worker injury, damage equipment, and loss of service.</p> <p>RISK MITIGATION: Anyone opening/closing panel doors and breakers shall be a qualified person who is wearing the appropriate PPE for the work being done. This safety precaution will greatly reduce risk of injury.</p> <p>BACK-OUT: BACK-OUT: Upon discovery or notification of an error, MOP manager will notify Chief Engineer & SREM or REM.</p>	

Section 4. Responsibilities

Personnel - List the personnel involved and their areas of responsibility.

Name	Affiliation / Company	Contact Number	Responsibility

Special Tools - List all known special tool requirements.

Special Tool	To be Provided By	Affiliation/Company	Verify Calibration Current

Section 5. Prior to Performing This Procedure

List all tasks to be completed prior to actual work commencement. The purpose of these steps is to ensure that the MOP including the switching tags, if applicable, has been "walked-down" (verifying the accuracy of each step and switching tag operation), to ensure that all required personnel, testing apparatus and special equipment are accounted for, to ensure that all pertinent documentation (drawings, manuals, specs, manufacturer recommendations, etc) are on hand and to ensure that the MOP and Work Orders have all been approved.

Task No.	Responsible Party	Description	Initial When Complete
1	MOP MGR	Fully approved Change Management document	
2		Controlled hard copy of a fully approved Method of Procedure document in hand	
3			
4			
5			
6			
7			
8			
9			
10			
11			

Section 7. Work Phases

Instructions:

- List all tasks in technical detail **including the required or desired result of the task (where applicable)**.
- Each task and required result shall be verified and initialed off as they are completed.
- Add extra lines or delete unused lines as required.
- For work efforts that span more than one day in the work period specified in Section 1 above, annotate such in the task line...eg: Work Day 1, MON, 02/02/04; then list all tasks in sequence for that day. The next day's work would start under the header: Work Day 2, TUE, 02/03/04 with the list of all tasks in sequence for that day.
- **Critical Steps**

Task No.	Responsible Party	Planned Time (hh:mm)	Task	Critical Step	Task Verifier Initials
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Section 8. Close-Out

Provide a summation of the outcome of the MOP work plan, including the overall results of the testing, upgrading, repairing and construction work. Include any useful information relative to lessons learned and next steps if necessary. Provide also a final listing of attendees and their phone numbers

Section 9. Signatures

This section is used to record the names of the MOP author, those provided an information copy of the MOP, those required to review and those responsible for approving the MOP. The definitions of the Roles section is:

Technical, Infrastructure and Work Process Review

Required (Yes/No)	Position or Title	Name (Printed/Typed)	Signature	Date
YES	MOP Manager			
	Consultant (if req'd)			
YES	Chief Engineer	Richard McBride		

MOP Approval

Required (Yes/No)	Position or Title	Name (Printed)	Signature	Approval Date
Yes	Asst. Chief Engineer			
Yes	Chief Engineer			
	Real Estate Manager			
	Sr. Real Estate Manager			
	General Manager			

<i>SCRIPTED OPERATION ONLY</i>	
DEVICE / SWITCH OPERATION TAG	
MOP <input style="width: 150px;" type="text"/>	TA <input style="width: 100px;" type="text"/>

STEP 1	
DEVICE INFORMATION	
<input type="checkbox"/> SWITCHBOARD <input type="checkbox"/> VALVE	
<i>Device ID</i>	<i>As-found Position</i>

STEP 2		
CRITICAL DEVICE OPERATION		
<i>SCRIPTED DEVICE / SWITCH OPERATION</i>		
Task No. (in MOP, Sec. 9)	OPERATION (Open/Close)	ITEM COMPLETE
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

STEP 3			
FIELD TAGGING TEAM AUTHORIZATION			
Group	Company	<i>Printed Name</i>	Initials
<i>Authorizer 1</i>			
<i>Authorizer 2</i>			
Once switching is completed, tags shall be returned with completed MOP document.			

- Section 10. Switching Tags**
- 1) Switching Tags are prepared as part of the script and should be prepared by the MOP author.
 - 2) A Field Tagging Team will complete the placement of the Switching Tags. The Field Tagging Team reviews the MOP script items and Switching Tags for accuracy at the equipment location. Switching Tags are affixed to specified devices at this time and initialed. The Field Tagging Team usually consists of the Chief Engineer and another individual familiar with the system operation.
 - 3) The device will be operated by the Switching Team. The Switching Team will usually be made up of at least two people. One person will Operate the identified device (Operator) and the other person will verify the operation with the MOP script (Director) according to one-line diagrams if applicable. Only the Switching Team will be allowed in the area where switching is to be performed.
 - 4) Each switching step will be signed of on the MOP after each step is completed.

APPENDIX 5
AV CONSTRUCTION DRAWINGS

AUDIOVISUAL DRAWING INDEX

NO.	DRAWING NO.	DRAWING NAME	ISSUE DATE	
			ISSUED FOR BID 95% CONSTRUCTION DOCUMENT - 04/26/2017	ISSUED FOR CONSTRUCTION DOCUMENT - 06/16/2017
1	TA-000.00	AUDIOVISUAL DRAWINGS INDEX & SCOPE OF RESPONSIBILITY	X	X
2	TA-001.00	AUDIOVISUAL GENERAL NOTES & INFORMATION	X	X
3	TA-213.00	AUDIOVISUAL OVERALL FLOOR PLAN -13TH FLOOR	X	X
4	TA-214.00	AUDIOVISUAL OVERALL FLOOR PLAN -14TH FLOOR	X	X
5	TA-215.00	AUDIOVISUAL OVERALL FLOOR PLAN -15TH FLOOR	X	X
6	TA-216.00	AUDIOVISUAL OVERALL FLOOR PLAN -16TH FLOOR	X	X
7	TA-217.00	AUDIOVISUAL OVERALL FLOOR PLAN -17TH FLOOR	X	X
8	TA-218.00	AUDIOVISUAL OVERALL FLOOR PLAN -18TH FLOOR	X	X
9	TA-219.00	AUDIOVISUAL OVERALL FLOOR PLAN -19TH FLOOR	X	X
10	TA-220.00	AUDIOVISUAL OVERALL FLOOR PLAN -20TH FLOOR	X	X
11	TA-221.00	AUDIOVISUAL OVERALL FLOOR PLAN -21TH FLOOR	X	X
12	TA-223.00	AUDIOVISUAL OVERALL FLOOR PLAN -23TH FLOOR	X	X
13	TA-313.00	AUDIOVISUAL OVERALL RCP - 13TH FLOOR (REMOVED)	X	
14	TA-314.00	AUDIOVISUAL OVERALL RCP - 14TH FLOOR (REMOVED)	X	
15	TA-315.00	AUDIOVISUAL OVERALL RCP - 15TH FLOOR (REMOVED)	X	
16	TA-316.00	AUDIOVISUAL OVERALL RCP - 16TH FLOOR (REMOVED)	X	
17	TA-317.00	AUDIOVISUAL OVERALL RCP - 17TH FLOOR (REMOVED)	X	
18	TA-318.00	AUDIOVISUAL OVERALL RCP - 18TH FLOOR (REMOVED)	X	
19	TA-319.00	AUDIOVISUAL OVERALL RCP - 19TH FLOOR (REMOVED)	X	
20	TA-320.00	AUDIOVISUAL OVERALL RCP - 20TH FLOOR (REMOVED)	X	
21	TA-321.00	AUDIOVISUAL OVERALL RCP - 21TH FLOOR (REMOVED)	X	
22	TA-323.00	AUDIOVISUAL OVERALL RCP - 23TH FLOOR (REMOVED)	X	
23	TA-601.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
24	TA-602.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
25	TA-603.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
26	TA-604.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
27	TA-605.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
28	TA-606.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
29	TA-607.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
30	TA-608.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
31	TA-609.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER	X	X
31	TA-610.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER		X
32	TA-611.00	AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER		X
33	TA-700.00	AUDIOVISUAL DETAIL DRAWINGS	X	X

AUDIOVISUAL SYSTEMS SCOPE OF RESPONSIBILITY MATRIX

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

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Date	Description
3/29/2017	PROGRESS DESIGN DEVELOPMENT
4/14/2017	ISSUE FOR ALT2 PERMIT
4/28/2017	ISSUE FOR BID, 30% AF
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name

OGS / NYS OAG

Project Number

06.0069.000

Description

DRAWING TITLE

AUDIOVISUAL DRAWINGS INDEX & SCOPE OF RESPONSIBILITY

Scale



NTS
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CABLE TYPES SCHEDULE						
1. THESE CABLE TYPES ARE CITED TO ILLUSTRATE THE MINIMUM CABLE PERFORMANCE REQUIREMENTS. UNLESS OTHERWISE NOTED, CABLES FROM OTHER MANUFACTURERS (I.E. WEST PENN. COMM SCOPE, LIBERTY CABLE, ETC.) WILL BE CONSIDERED ACCEPTABLE IF DATA SHEETS ARE SUBMITTED PRIOR TO INSTALLATION AND APPROVED BY AV CONSULTANT.						
2. THE USE OF PLENUM RATED CABLING IS REQUIRED FOR ALL AV CABLING RUN OUTSIDE OF METAL CONDUIT.						
3. THE CONTRACTOR SHALL ONLY USE PLUGS AND JACKS SPECIFICALLY MANUFACTURED AND DESIGNED FOR THE CABLE USED. UNLESS OTHERWISE NOTED, THIRD-CONNECTORS FROM MANUFACTURERS OTHER THAN THE CABLE MANUFACTURER, I.E. KINGS, SWITCHCRAFT, AMP, AMPHENOL, LEMO, NEUTRIK, ETC. WILL BE CONSIDERED ACCEPTABLE IF DATA SHEETS ARE SUBMITTED PRIOR TO INSTALLATION.						
CABLE TYPE	DESCRIPTION	MANUFACTURER	NON-PLENUM		PLENUM	
			MODEL	O.D.	MODEL	O.D.
AUDIO						
AUDIO (MICROPHONE & LINE LEVEL)	(1) PAIR 22 AWG TWISTED PAIR	BELDEN	9451	0.135"	9451P	0.127"
AUDIO (DIGITAL)	(1) PAIR 24 AWG (110 OHM) TWISTED PAIR	BELDEN	1800F	0.211"	1801B	0.165"
AUDIO (SPEAKER LEVEL, 70V)	2 CONDUCTOR 18 AWG STRANDED	BELDEN	5300UP	0.184"	82740	0.143"
AUDIO (SPEAKER LEVEL, SPEECH)	2 CONDUCTOR 16 AWG STRANDED	BELDEN	5200UP	0.208"	6200UE	0.176"
AUDIO (SPEAKER LEVEL, PROGRAM)	2 CONDUCTOR 14 AWG STRANDED	BELDEN	5100UP	0.260"	6100UE	0.218"
AUDIO (SPEAKER LEVEL, PERFORMANCE)	2 CONDUCTOR 12 AWG STRANDED	BELDEN	5000UP	0.302"	6000UE	0.252"
AUDIO (SPEAKER LEVEL, HIGH WATTAGE)	2 CONDUCTOR 10 AWG STRANDED	BELDEN	5T00UP	0.356"	6T00UP	0.308"
VIDEO						
RGBHV (COMPUTER VIDEO, INTRARACK ONLY)	(5) 26 AWG MINI COAX	EXTRON	MHR-5	0.357"	MHR-5P	0.304"
RGBHV (COMPUTER VIDEO)	(5) RG-59U 20 AWG 75 OHM COAX	WEST PENN	WP8195	0.720"	WP258195	0.595"
VIDEO (UTP NON-CATEGORY)	(4) PAIR 24 AWG LOW-SKEW TWISTED PAIR	BELDEN	7987R	0.195"	7987P	0.201"
VIDEO (UTP CATEGORY)	REFER TO IT PROJECT STANDARDS					
VIDEO (ANALOG COMPONENT VIDEO)	RG-59U 20 AWG 75 OHM COAX	BELDEN	8281	0.305"	88281	0.271"
VIDEO (DIGITAL VIDEO)	RG-59U 20 AWG 75 OHM COAX	BELDEN	1505A	0.233"	1506A	0.196"
RF / CATV / ALS / WIRELESS ANT COAX						
RF (HARDLINE)	HARDLINE (75 OHM)	COMMSCOPE			P3-500 SERIES JCAR	
RF (COAX <150')	RG-6/U (75 OHM)	BELDEN	9118	0.275"	1152A	0.275"
RF (COAX <250')	RG-11/U (75 OHM)	BELDEN	9064	0.400"	1153A	0.387"
RF (COAX TRIAX)	RG-11/U (75 OHM)	BELDEN	1858A	0.520"	1859A	0.406"
RF (WIRELESS ANTENNA)	RG-8/U (50 OHM)	BELDEN	9913F7	0.405"	89913	0.364"
RF (MICROWAVE ANTENNA; RISER-RATED)	HELIAX (50 OHM)	ANDREW	LD4-60A	0.63"	-	-
CONTROL						
CONTROL (SERIAL APPLICATIONS)	(2) PAIR 22 AWG TWISTED PAIR	BELDEN	8723	0.160"	88723	0.146"
CONTROL (TOUCH/CONTROL SYSTEM APPLICATIONS)	(1) PAIR 22 AWG TWISTED PAIR & (1) PAIR 18 AWG	BELDEN	1502R	0.250"	1502P	0.205"
CONTROL (NETWORK)	REFER TO IT PROJECT STANDARDS					
FIBER						
MULTI-MODE (HORIZONTAL)	(2) 62.5UM (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	-	P-002-DS-6F-FSUOR	0.15"
MULTI-MODE (RISER)	(2) 62.5UM (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	-	R-002-DS-6F-FSUSL	0.15"
SINGLE-MODE (HORIZONTAL)	(2) 250UM (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	-	P-002-DS-8W-FSUYL	0.15"
SINGLE-MODE (RISER)	(2) 250UM (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	-	R-002-DS-8W-FSUYL	0.15"
SMPT 304M CAMERA	(4) 24AWG COPPER, (2) 24AWG COPPER, (2) SINGLE-MODE FIBER	MOHAWK	96040	0.362"	96920	0.294"

ESTIMATED SIZE HVAC LOADS

- THE NORMAL HVAC PROVISIONS FOR THE CONFERENCE ROOMS SHALL BE SUFFICIENT TO HANDLE ANY ADDITIONAL HEAT LOAD PRESENTED BY THE AUDIOVISUAL SYSTEM COMPONENTS WITHIN THE CONFERENCE ROOMS - EXCEPT SPECIFIC AREA AS NOTED IN THE CHART BELOW.
- A THERMOSTAT WITHIN EACH CONFERENCE ROOM IS RECOMMENDED TO PROPERLY MAINTAIN ROOM TEMPERATURE.
- ROOM TEMPERATURE MUST NOT EXCEED 80 DEGREES FAHRENHEIT DURING CONFERENCING TO PREVENT AUTOMATIC SHUTDOWN OF SOME ESSENTIAL EQUIPMENT.
- RATING ESTIMATES FOR EQUIPMENT OTHER THAN AUDIO AMPLIFIERS ARE BASED ON THE AV COMPONENTS' PUBLISHED MAXIMUM POWER CONSUMPTION (PHASE VALUE) AND THE FOLLOWING FORMULA: WATTS X 3.41 X 75% = BTU/HR
- RATING ESTIMATES FOR AUDIO AMPLIFIERS ARE BASED ON THE AV COMPONENTS' PUBLISHED BTU/HR AT 1/8TH POWER.
- IN THE CASE WHERE AUDIOVISUAL EQUIPMENT CABINETS ARE LOCATED IN CLOSETS, CABINETS, OR FURNITURE, ADEQUATE VENTILATION MUST BE PROVIDED TO ALLOW FRESH AIR EXCHANGE WITHIN THE ENCLOSURE.

ROOM	POWER LOAD ESTIMATE (W)	HEAT LOAD ESTIMATE (BTU/hr)
ONE RACK AV CLOSET	1200	4000
TWO RACK AV CLOSET	2400	8000
THREE RACK CLOSET	3600	12000
FOUR RACK CLOSET	4800	16000

VIDEO TELECONFERENCING LIGHTING GUIDELINES

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

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3	4/28/2017	ISSUE FOR BID, 30%
4	6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name

OGS / NYS OAG

Project Number

06.0069.000

Description

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Scale

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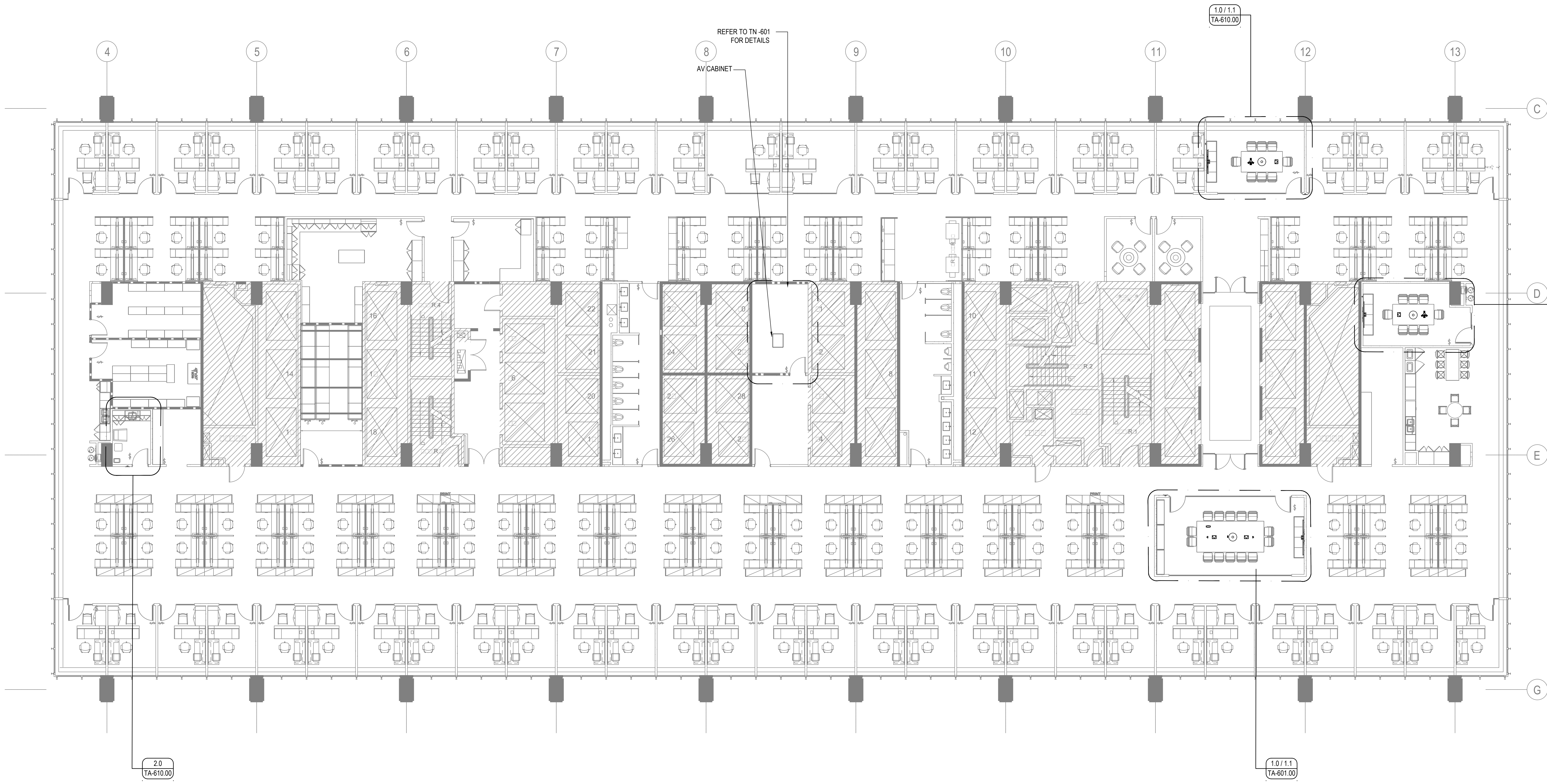
Project Number
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Description
**AUDIOVISUAL OVERALL
FLOOR PLAN - 13TH FLOOR**

Scale
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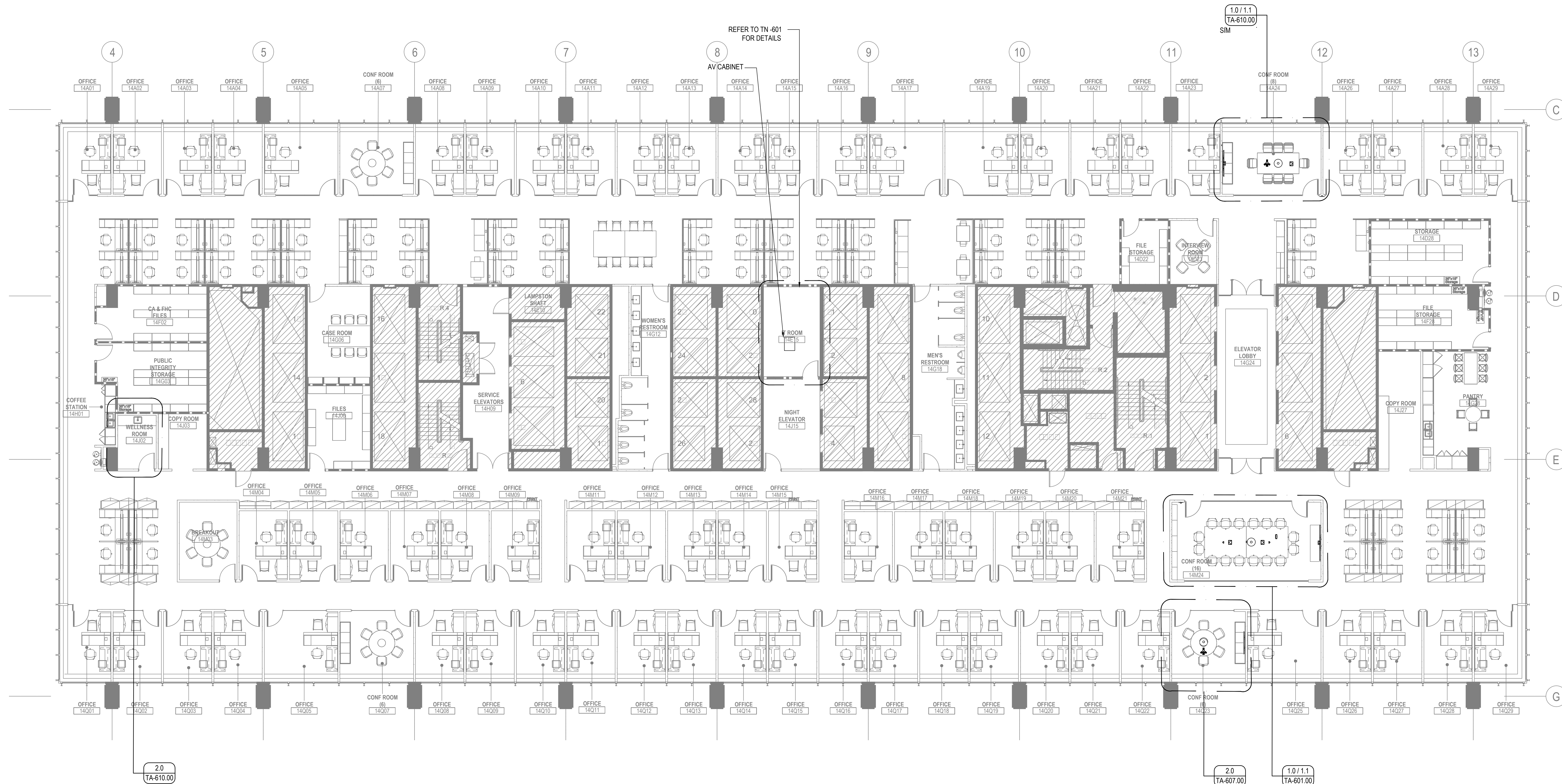
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Project Name
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Project Number
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Description
DRAWING TITLE
AUDIOVISUAL OVERALL
FLOOR PLAN - 14TH FLOOR

Scale
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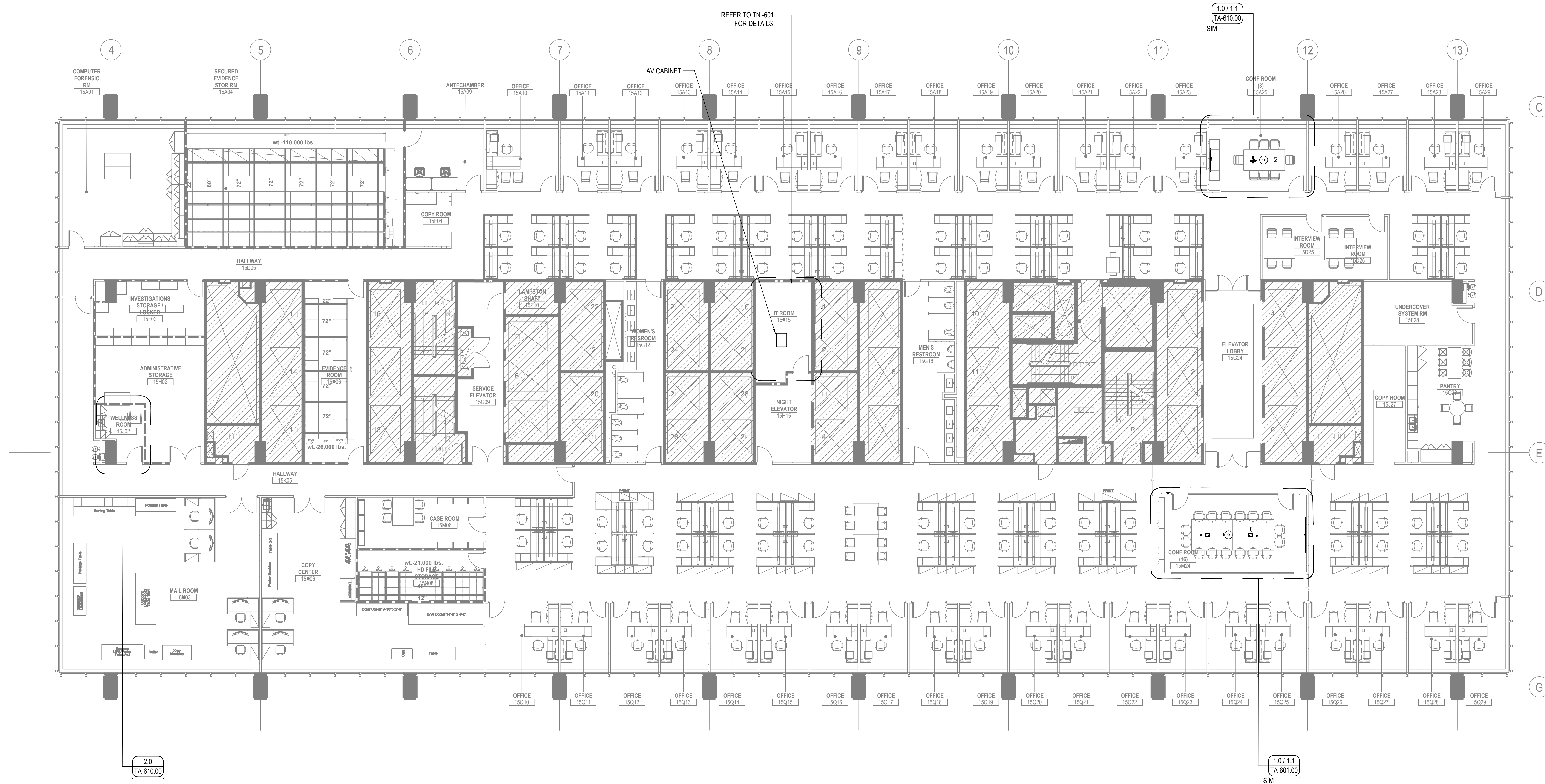
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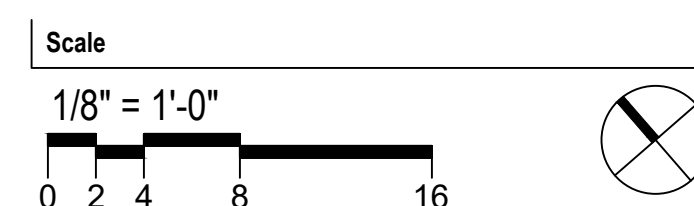
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6/16/2017	ISSUE FOR CONSTRUCTION, 100%	

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Project Number
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Description
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AUDIOVISUAL OVERALL FLOOR PLAN - 15TH FLOOR



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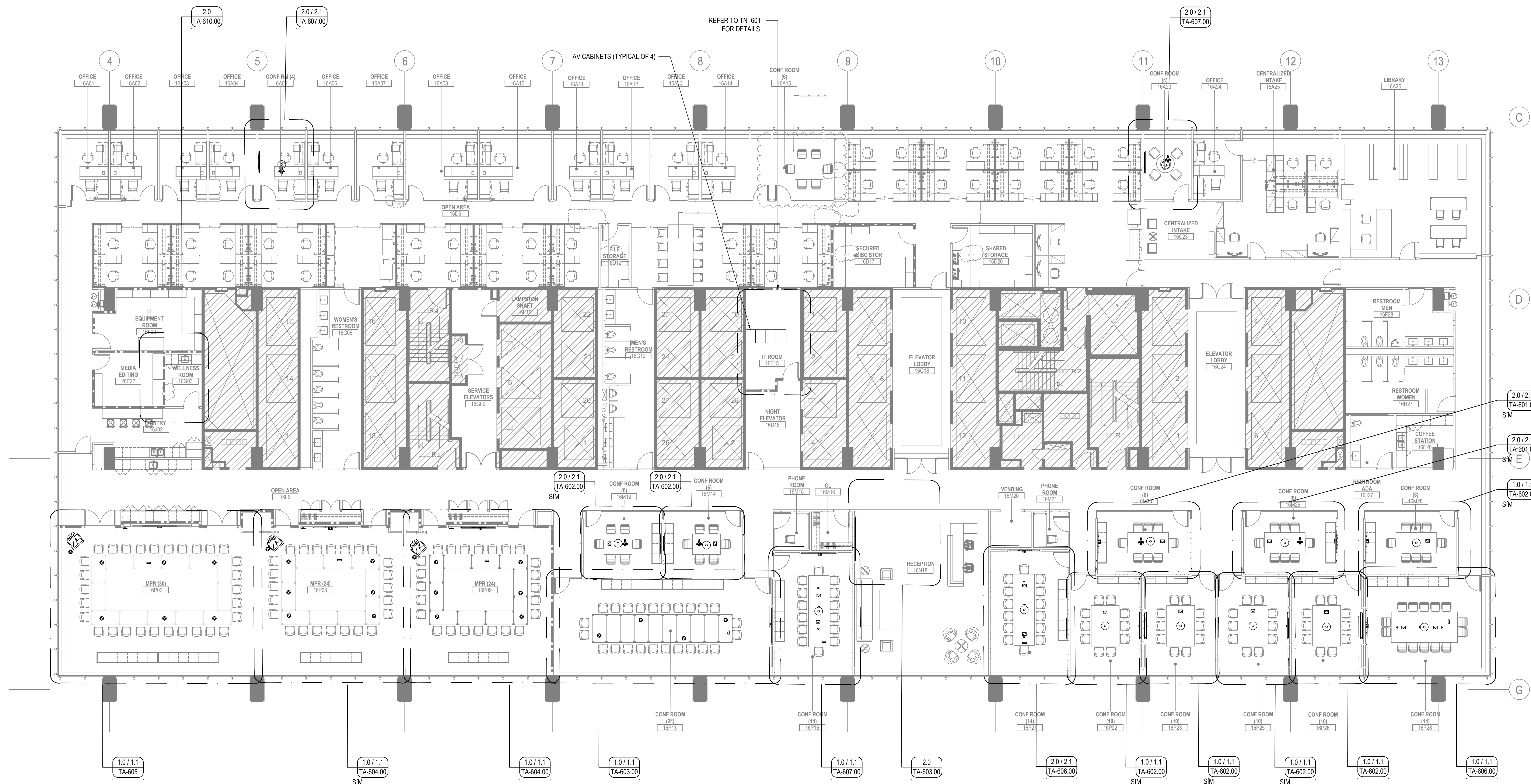
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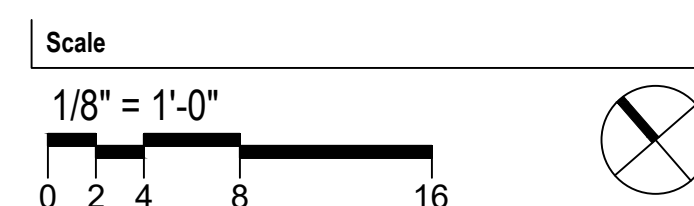
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Project Name
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Project Number
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Description
 DRAWING TITLE
 AUDIOVISUAL OVERALL



Scale
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TA-216.00

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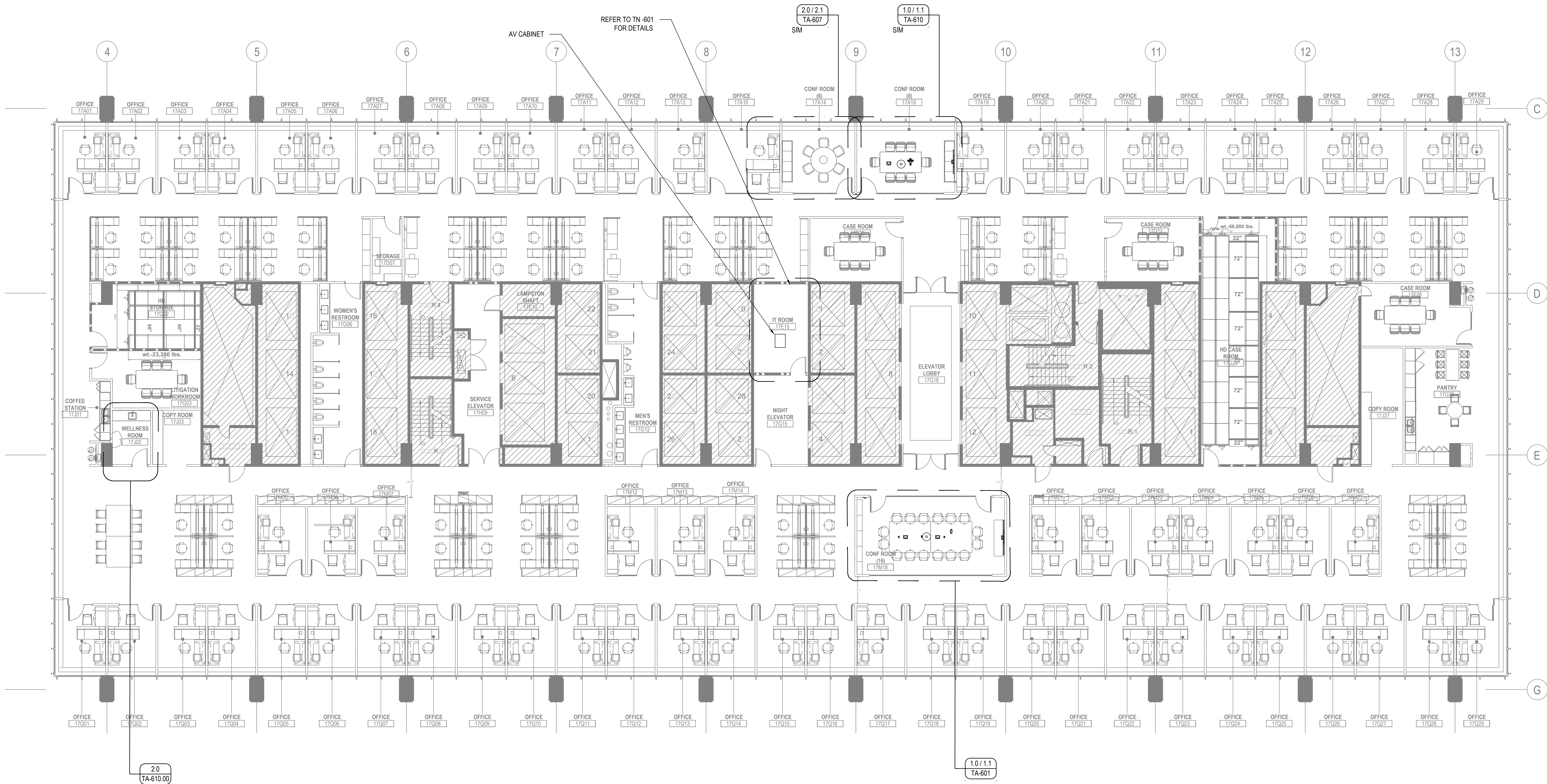
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Description
DRAWING TITLE
AUDIOVISUAL OVERALL
FLOOR PLAN -17TH FLOOR

Scale
1/8" = 1'-0"
0 2 4 8 16

TA-217.00

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1.0 OVERALL FACILITY PLAN
1/8"=1'-0" AUDIOVISUAL OVERALL FLOOR PLAN -17TH FLOOR

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Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALI2 PERMIT
3/4/2017	ISSUE FOR BID, 30%
4/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

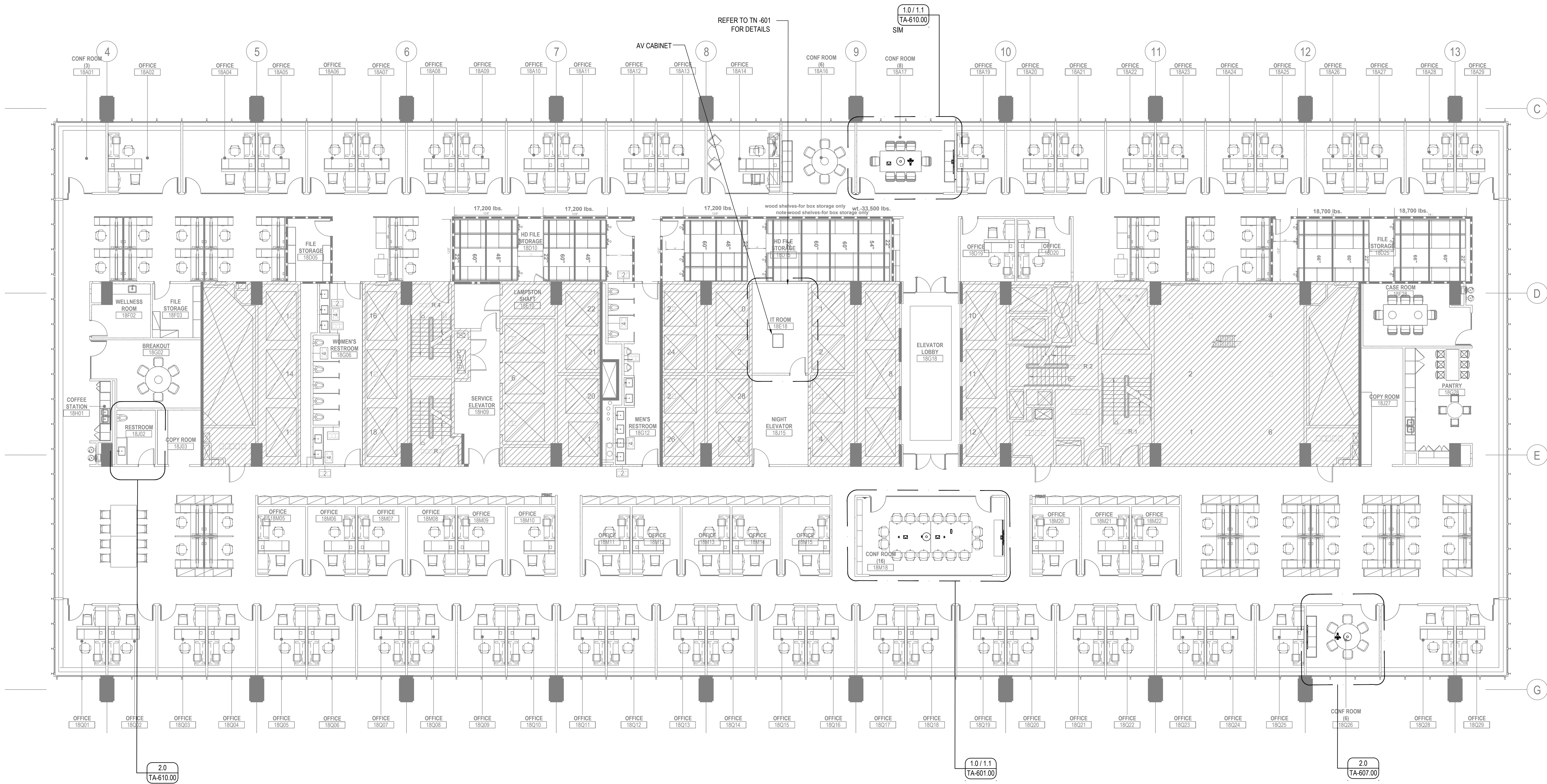
Project Number
06.0069.000

Description
DRAWING TITLE
AUDIOVISUAL OVERALL FLOOR PLAN -17TH FLOOR

Scale
1/8" = 1'-0"
 0 2 4 8 16

TA-218.00

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1.0 OVERALL FACILITY PLAN
1/8"=1'-0" AUDIOVISUAL OVERALL FLOOR PLAN -18TH FLOOR

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Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALTY PERMIT
3/4/2017	ISSUE FOR BID, 30%
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

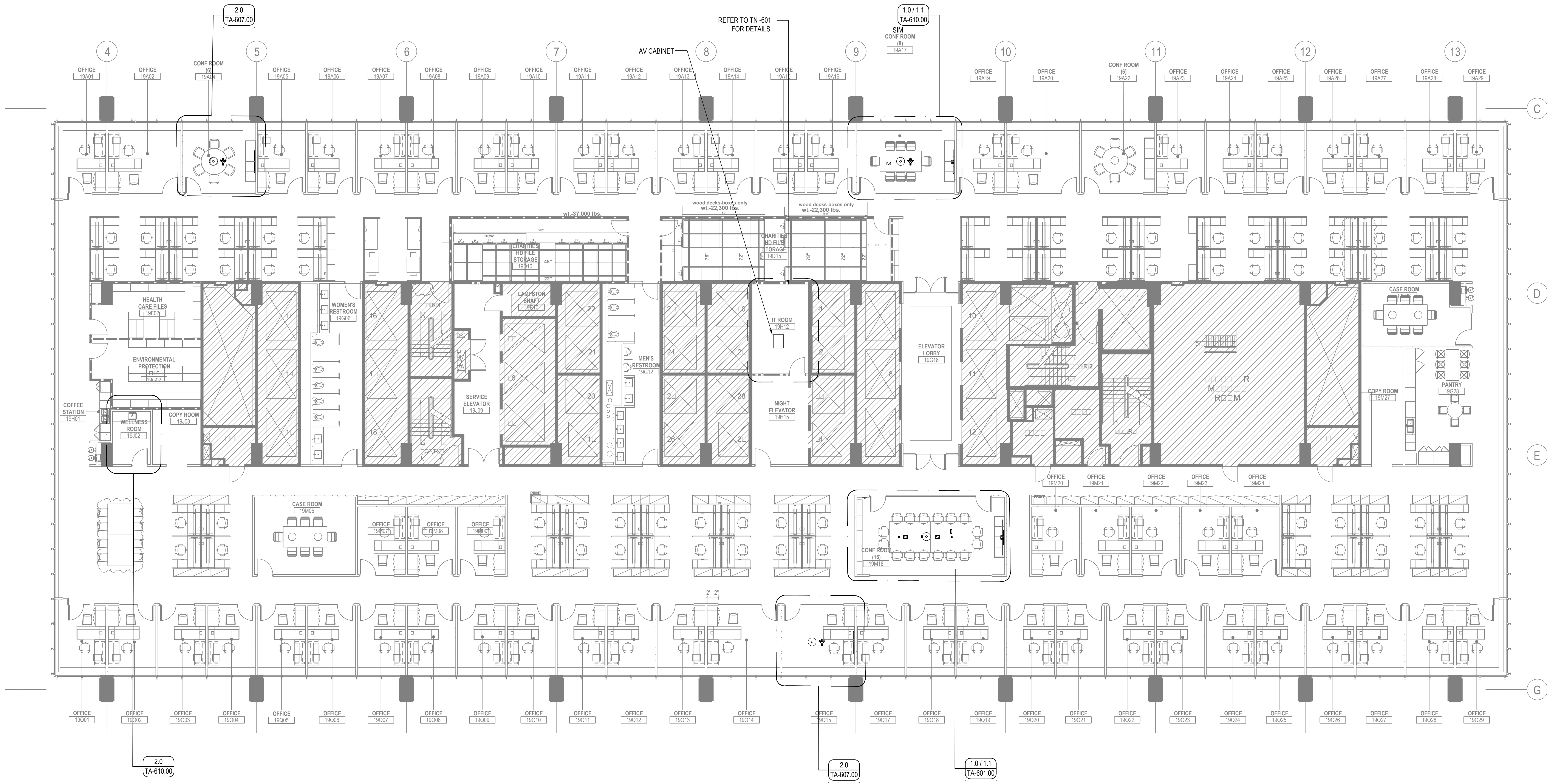
Project Number
06.0069.000

Description
DRAWING TITLE
AUDIOVISUAL OVERALL FLOOR PLAN - 19TH FLOOR

Scale
1/8" = 1'-0"
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TA-219.00

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Date	Description	AF
1/3/2017	PROGRESS DESIGN DEVELOPMENT	
2/4/2017	ISSUE FOR ALI2 PERMIT	AF
3/4/2017	ISSUE FOR BID, 30%	AF
6/16/2017	ISSUE FOR CONSTRUCTION, 100%	

Seal / Signature

Project Name
OGS / NYS OAG

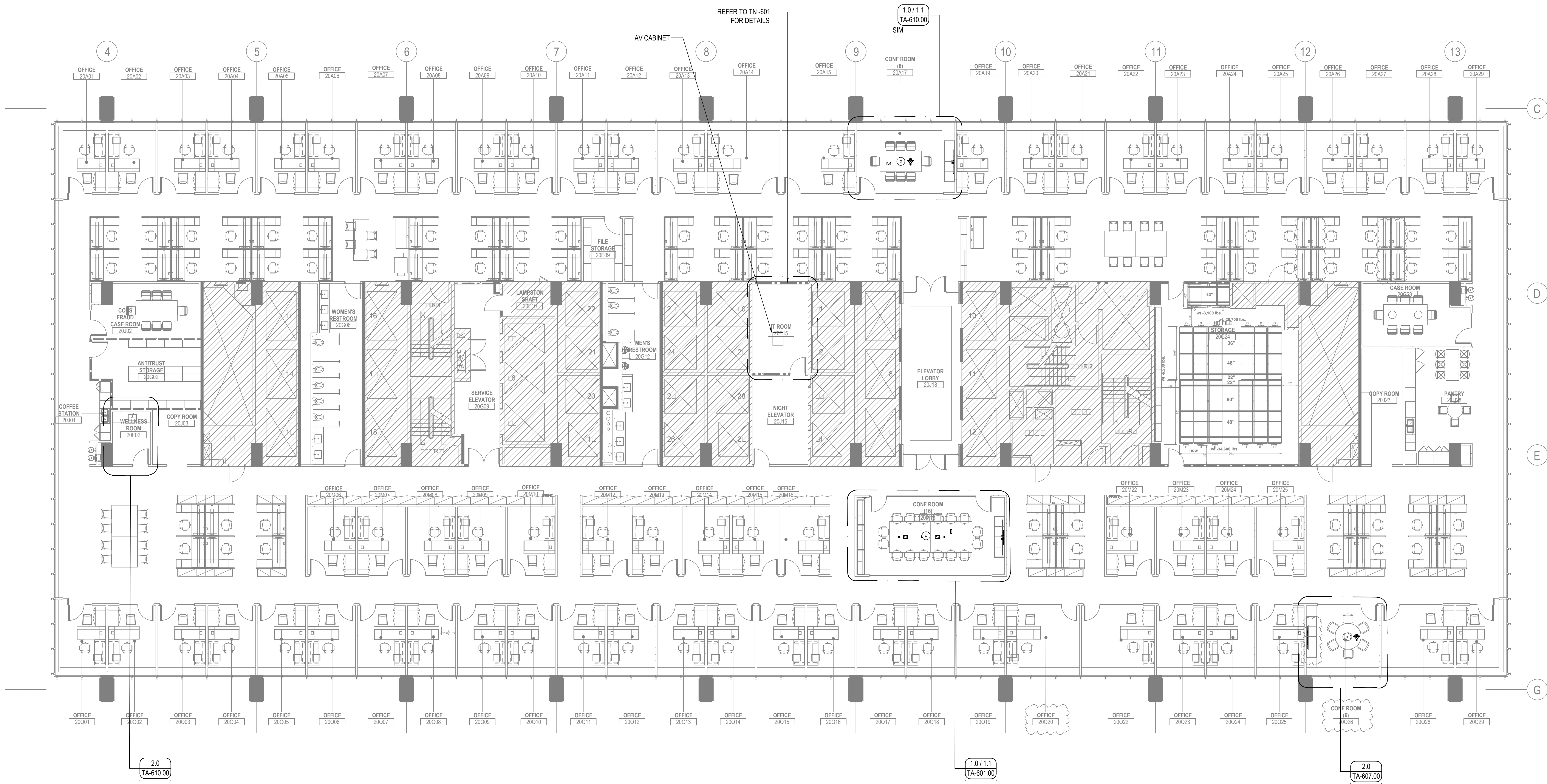
Project Number
06.0069.000

Description
DRAWING TITLE
AUDIOVISUAL OVERALL
FLOOR PLAN -20TH FLOOR

Scale
1/8" = 1'-0"
0 2 4 8 16

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Date	Description
3/29/2017	PROGRESS DESIGN DEVELOPMENT
4/14/2017	ISSUE FOR ALTY PERMIT AF
4/28/2017	ISSUE FOR BID, 30% AF
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

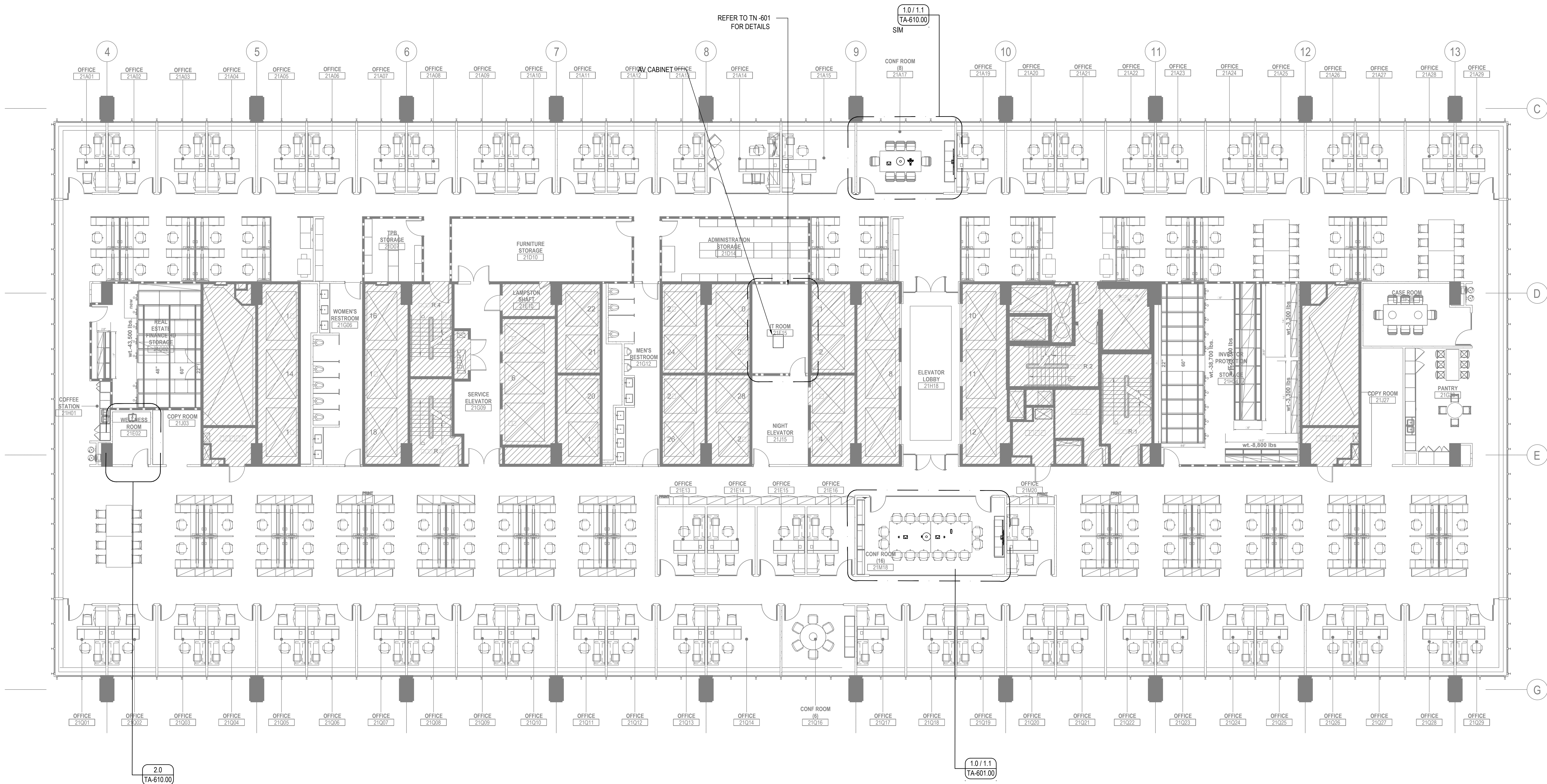
Project Number
06.0069.000

Description
**DRAWING TITLE
AUDIOVISUAL OVERALL
FLOOR PLAN -21ST FLOOR**

Scale
1/8" = 1'-0"
0 2 4 8 16

TA-221.00

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1.0 OVERALL FACILITY PLAN
AUDIOVISUAL OVERALL FLOOR PLAN -21ST FLOOR
1/8"=1'-0"

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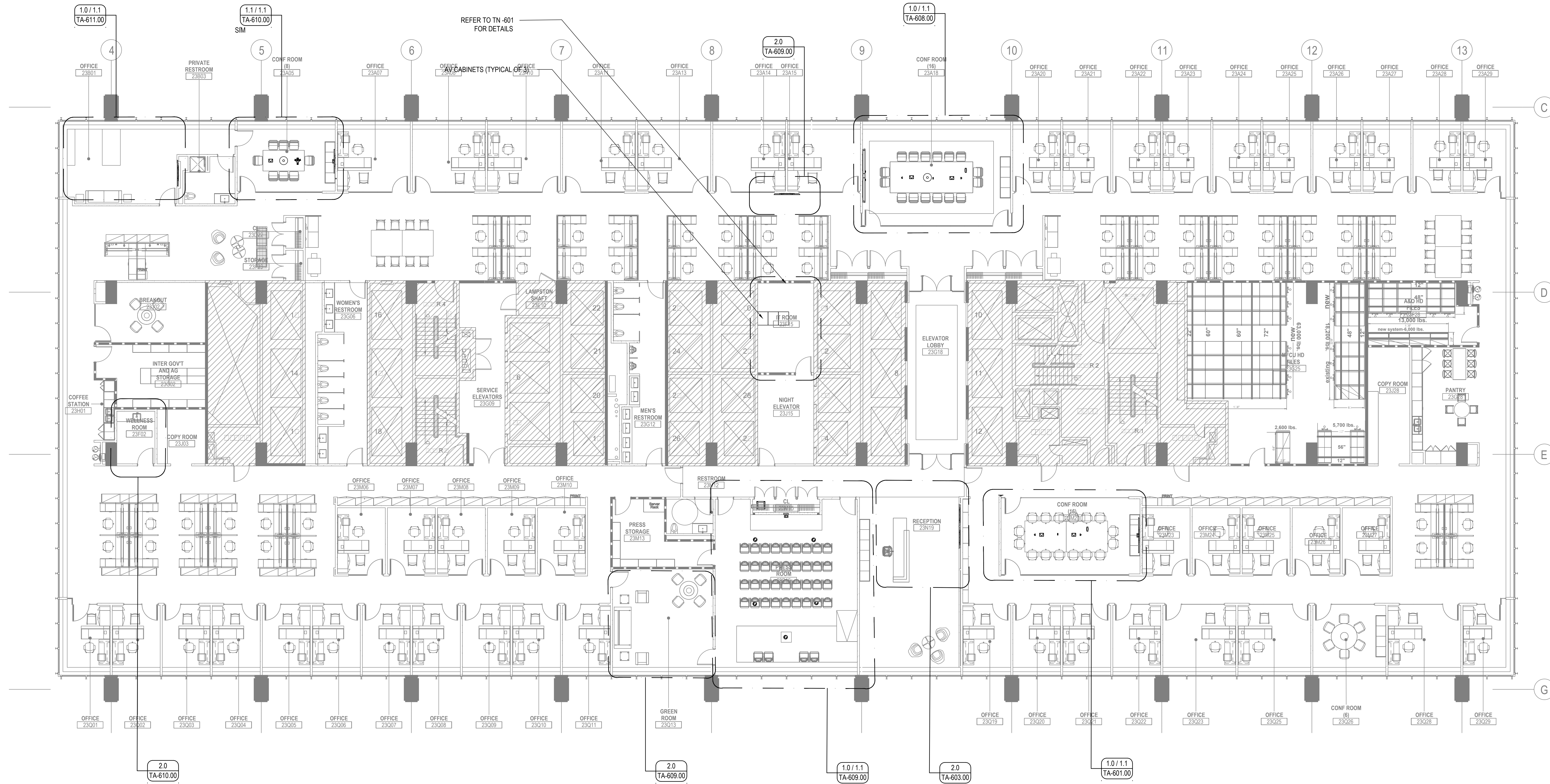
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Date	Description	AF
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2/4/2017	ISSUE FOR ALI2 PERMIT	AF
3/4/2017	ISSUE FOR BID, 30%	AF
4/16/2017	ISSUE FOR CONSTRUCTION, 100%	

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
**DRAWING TITLE
AUDIOVISUAL OVERALL
FLOOR PLAN -23RD FLOOR**

Scale
1/8" = 1'-0"
0 2 4 8 16

TA-223.00

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SYMBOL	DESCRIPTION
1-#	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CREDENZA 1-3 LECTERN 1-4 PULL-OUT
2-#	CONNECTIVITY: 2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK PULL BOX
3-#	CONTROL/SCHEDULING: 3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED BUTTON/KEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
4-#	AUDIO INPUT: 4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
5-#	AUDIO OUTPUT: 5-1 WALL MOUNTED LOUSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUSPEAKER 5-4 CEILING RECESSED LOUSPEAKER
6-#	VIDEO ORIGIN/SOURCE: 6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
7-#	VIDEO DISPLAY (TYPE 1): 7-1 (55") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X2) 4-55" DISPLAYS 7-9 (55") CEILING MOUNTED FLAT PANEL
8-#	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 VIDEO PROJECTOR, ON MOTORIZED LIFT
9-#	VIDEO DISPLAY (TYPE 3): 9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#) WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#) CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
10-#	MISCELLANEOUS: 10-1 BLACKOUT SHADES, MANUAL 10-2 BLACKOUT SHADES, MOTORIZED 10-3 PC (OFE) 10-4 LAPTOP (OFE)

JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-2	PULL AREA THRU CONDUIT STUB UP	EC	AV DEVICE CONNECTIONS	STUB CONCEALED BY FURNITURE
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
3-1	1 GANG HORIZONTAL	EC	ROOM SCHEDULER PANEL	
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
7-1	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
7-5	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
7-6	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS

GENERAL NOTES:

- THIS DRAWING INDICATES CONNECTIVITY OF CONDUIT, JUNCTION BOXES, AND POINTS OF AUDIOVISUAL SYSTEMS CONNECTIVITY ONLY. ACTUAL PATHS OF CONDUITS TO BE DETERMINED BY ELECTRICAL CONTRACTOR.
- REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
- FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.

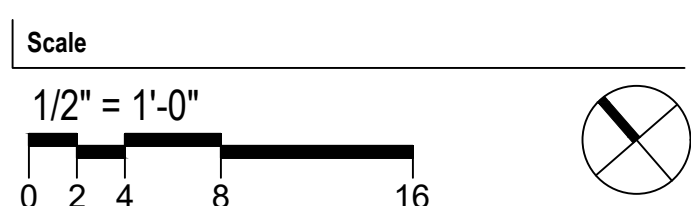
Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALI2 PERMIT
3/29/2017	ISSUE FOR BID, 30%
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
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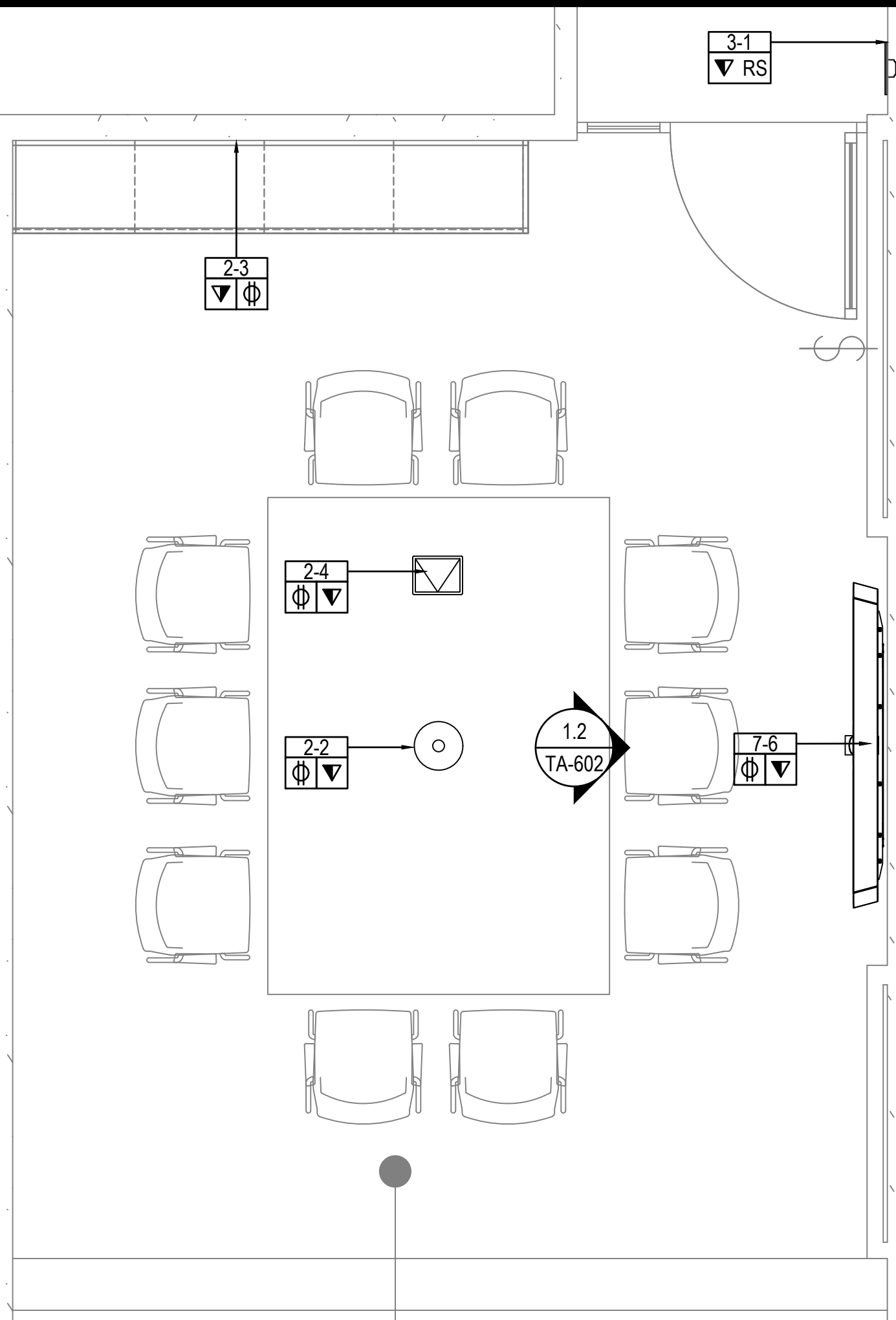
Project Number
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Description
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AUDIOVISUAL ENLARGED

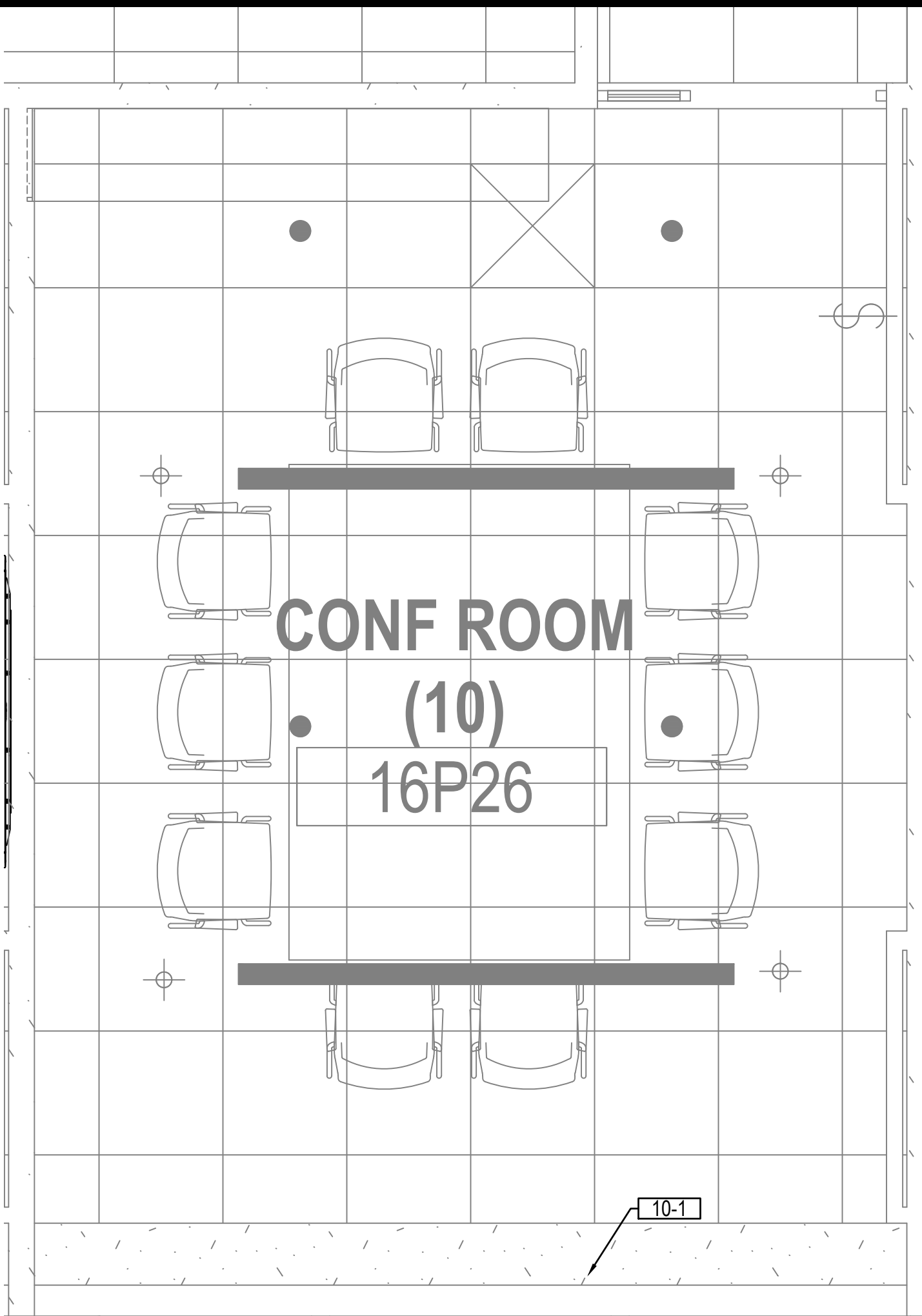


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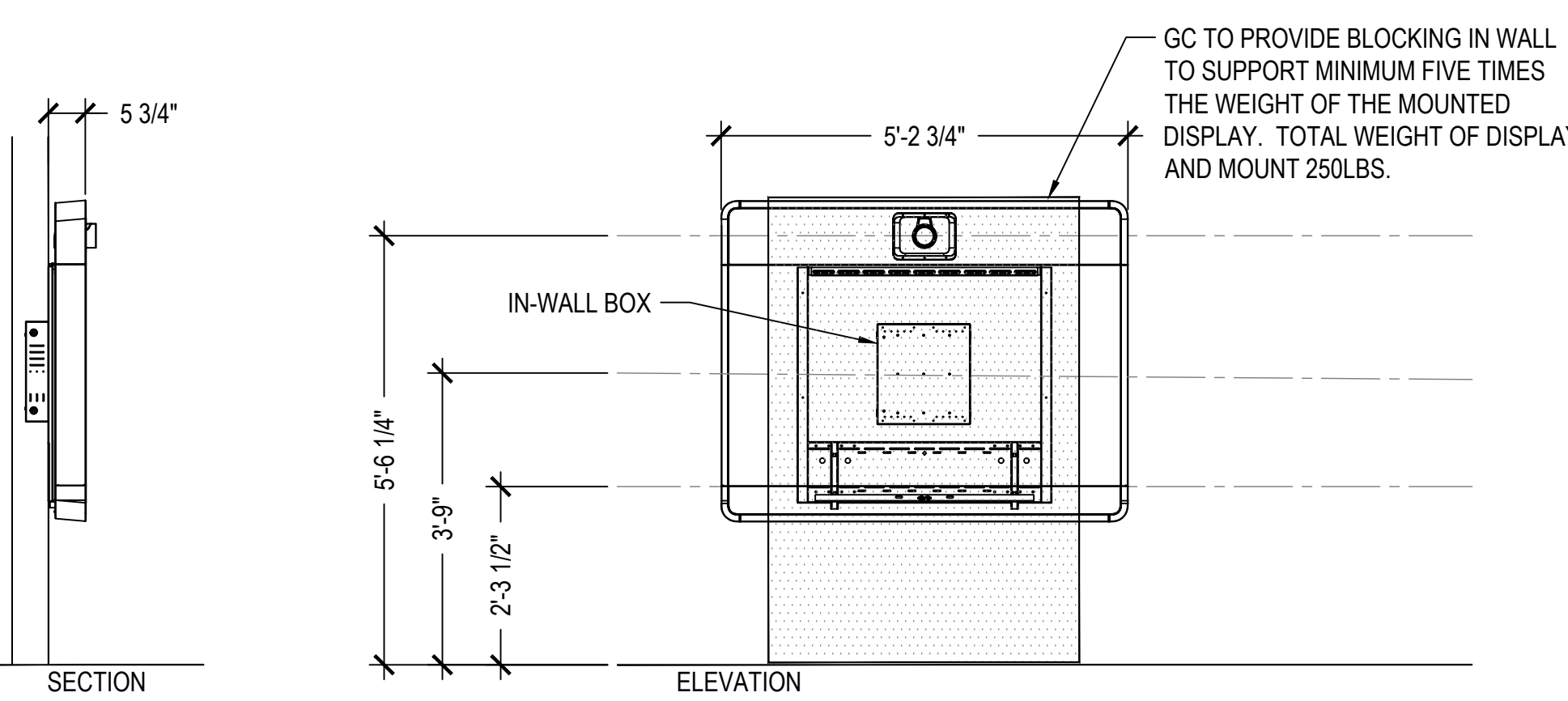
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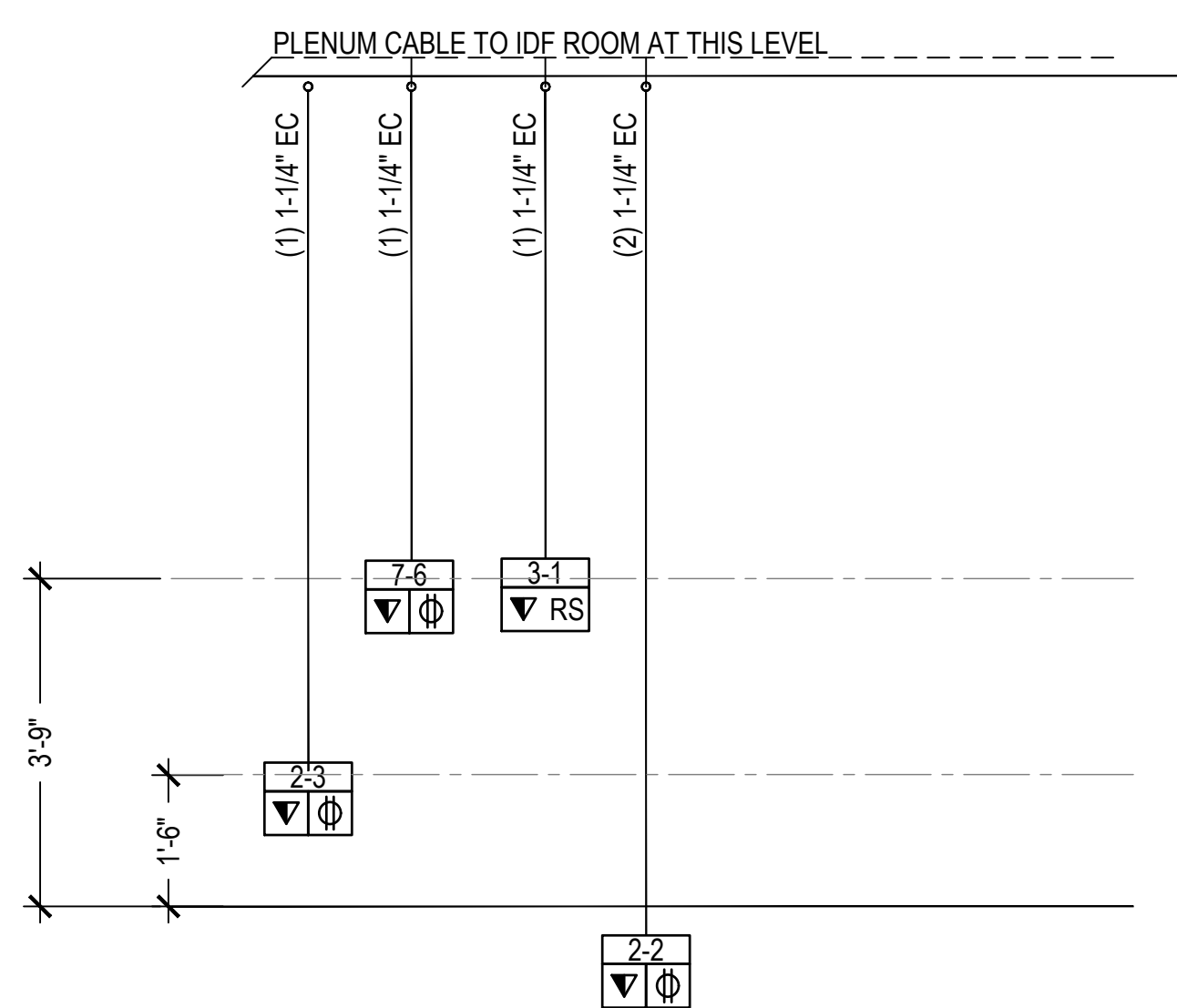
1.0 ENLARGED FACILITY PLAN
1/2"=1'-0"
MEDIUM CONFERENCE ROOM - TYPICAL 16P22, 16P23, 16P25, 16P26, 16M28



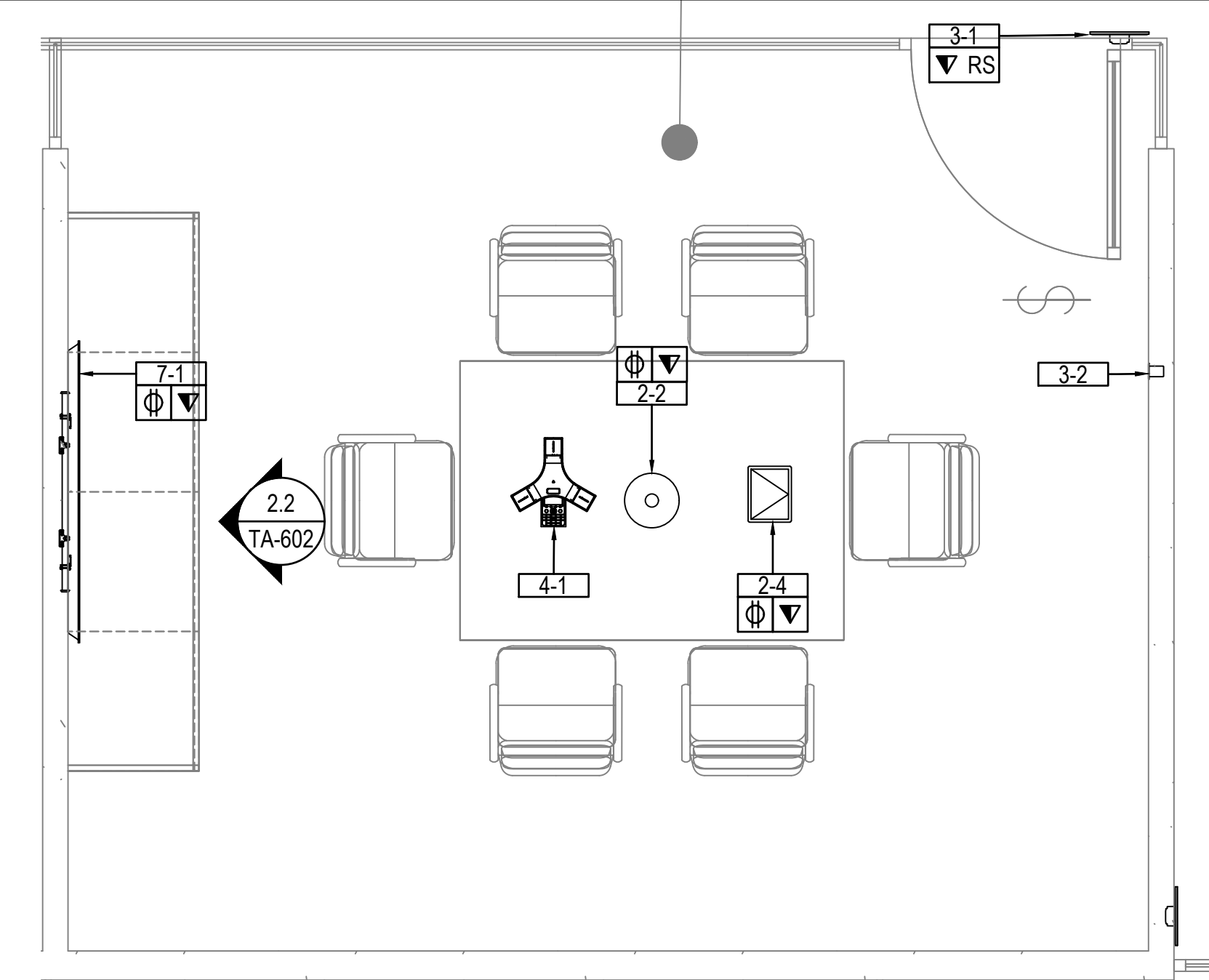
1.1 ENLARGED REFLECTED CEILING PLAN
1/2"=1'-0"
MEDIUM CONFERENCE ROOM - TYPICAL 16P22, 16P23, 16P25, 16P26, 16M28



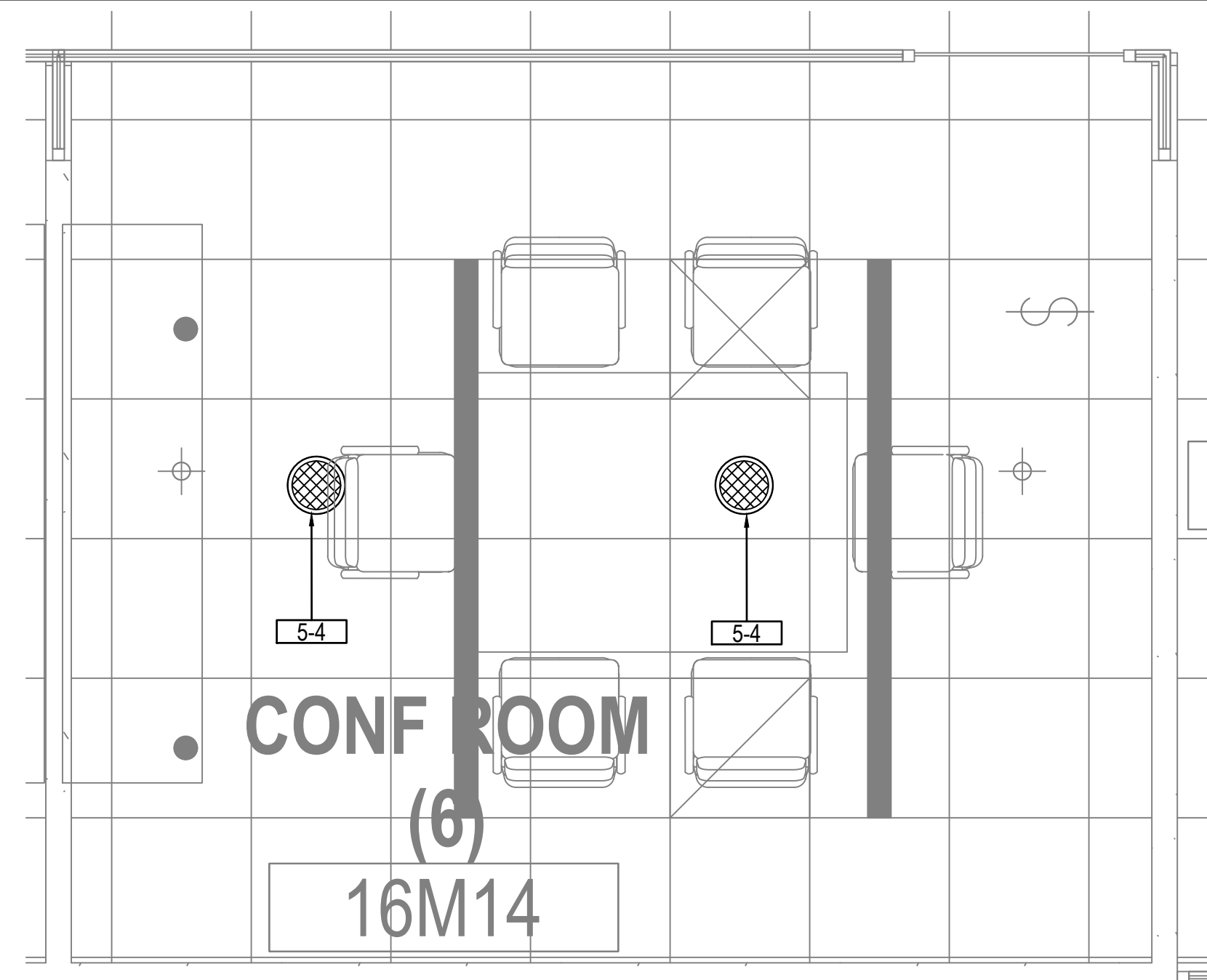
1.2 SECTION AND ELEVATION
1/2"=1'-0"
MEDIUM CONFERENCE ROOM - TYPICAL 16P22, 16P23, 16P25, 16P26, 16M28



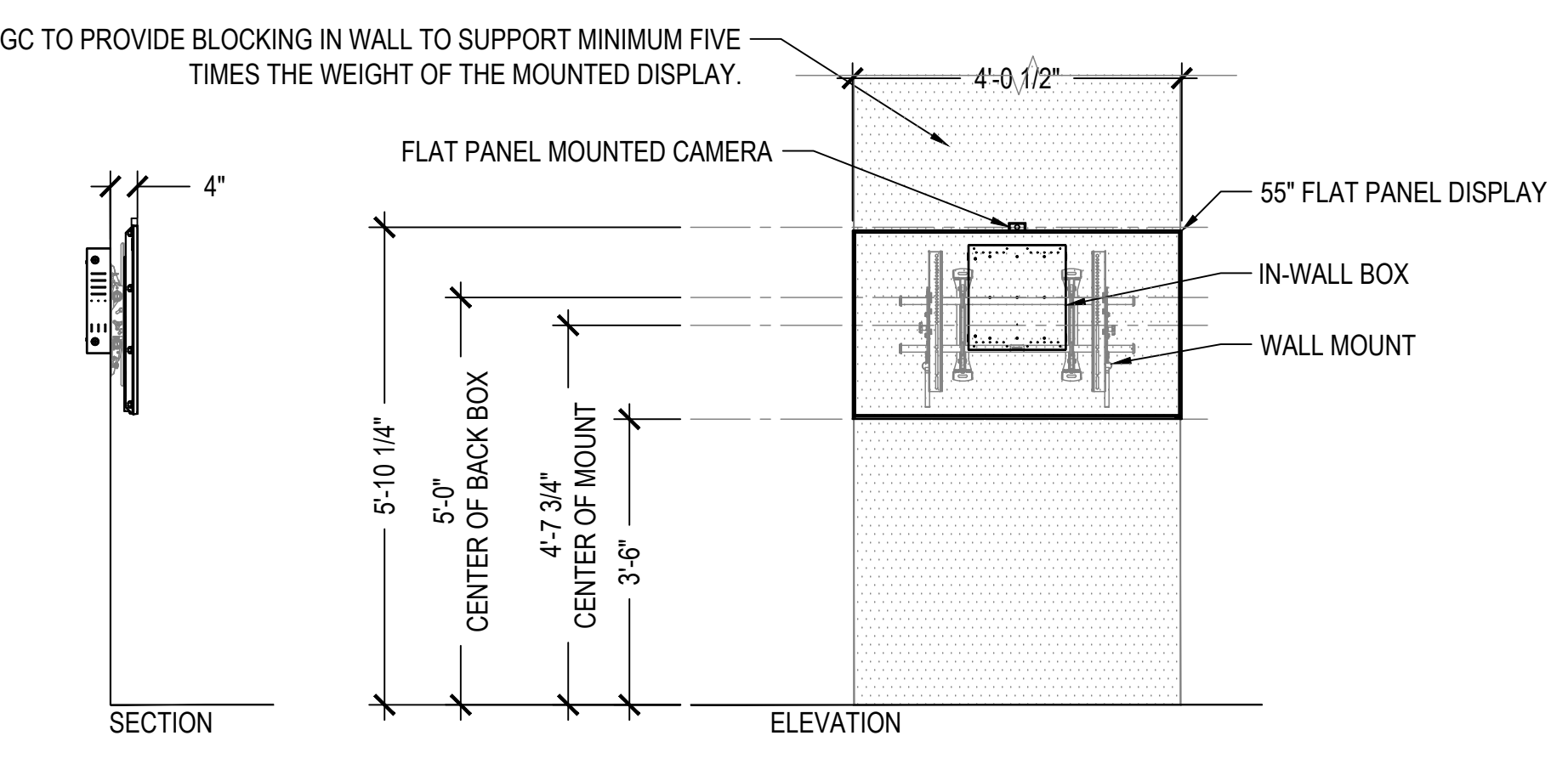
1.3 CONDUIT RISER DIAGRAM
1/2"=1'-0"
MEDIUM CONFERENCE ROOM - TYPICAL 16P22, 16P23, 16P25, 16P26, 16M28



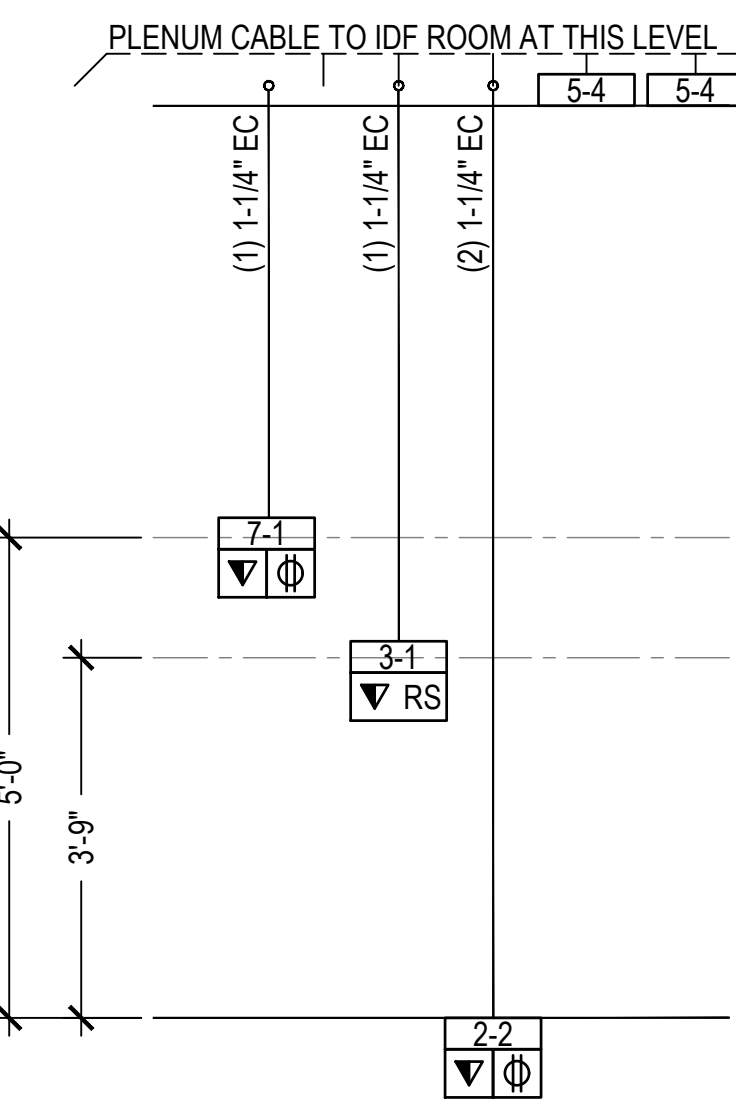
2.0 ENLARGED FACILITY PLAN
1/2"=1'-0"
SMALL CONFERENCE ROOM - TYPICAL 16M12, 16M14



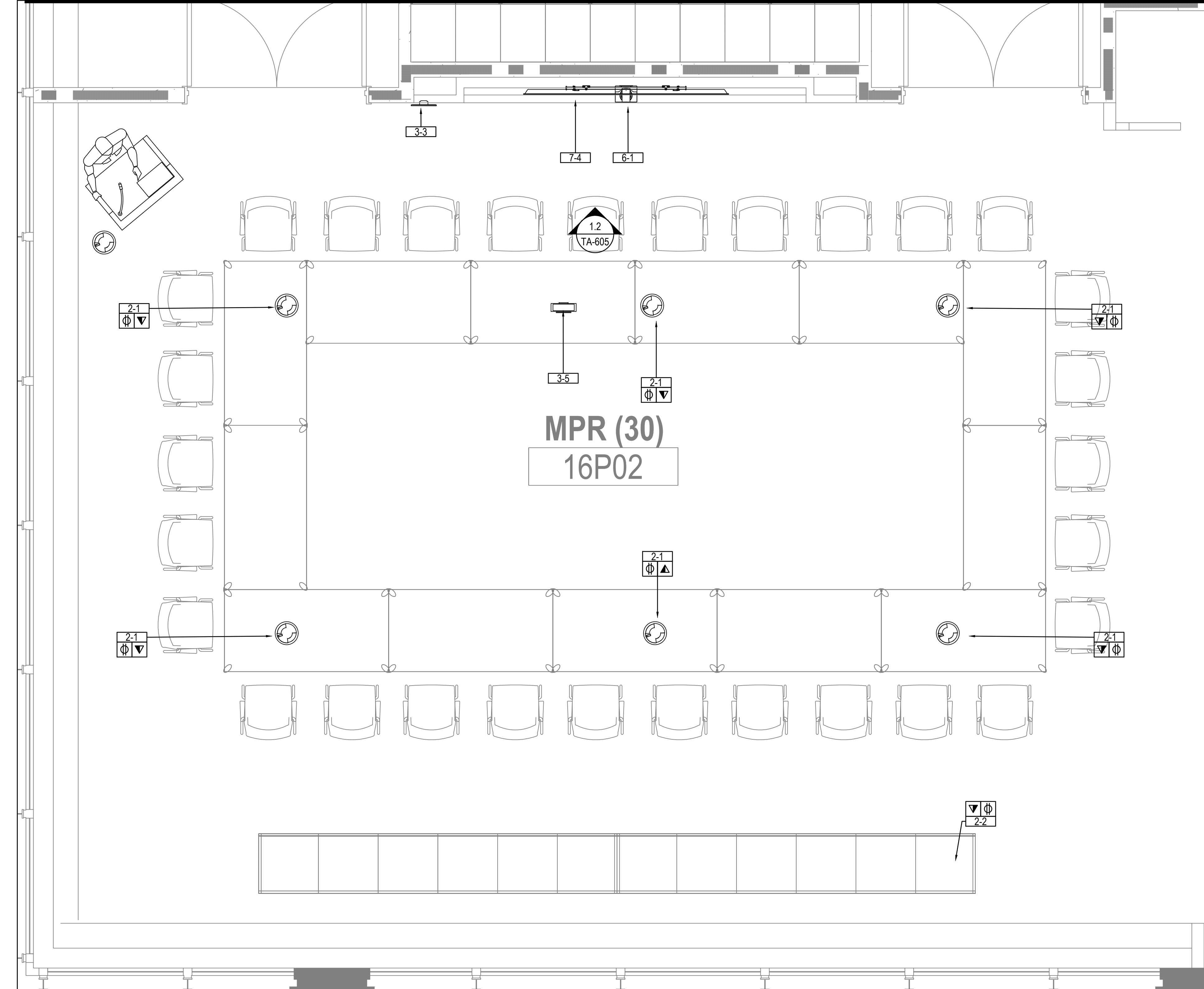
2.1 ENLARGED REFLECTED CEILING PLAN
1/2"=1'-0"
SMALL CONFERENCE ROOM - TYPICAL 16M12, 16M14



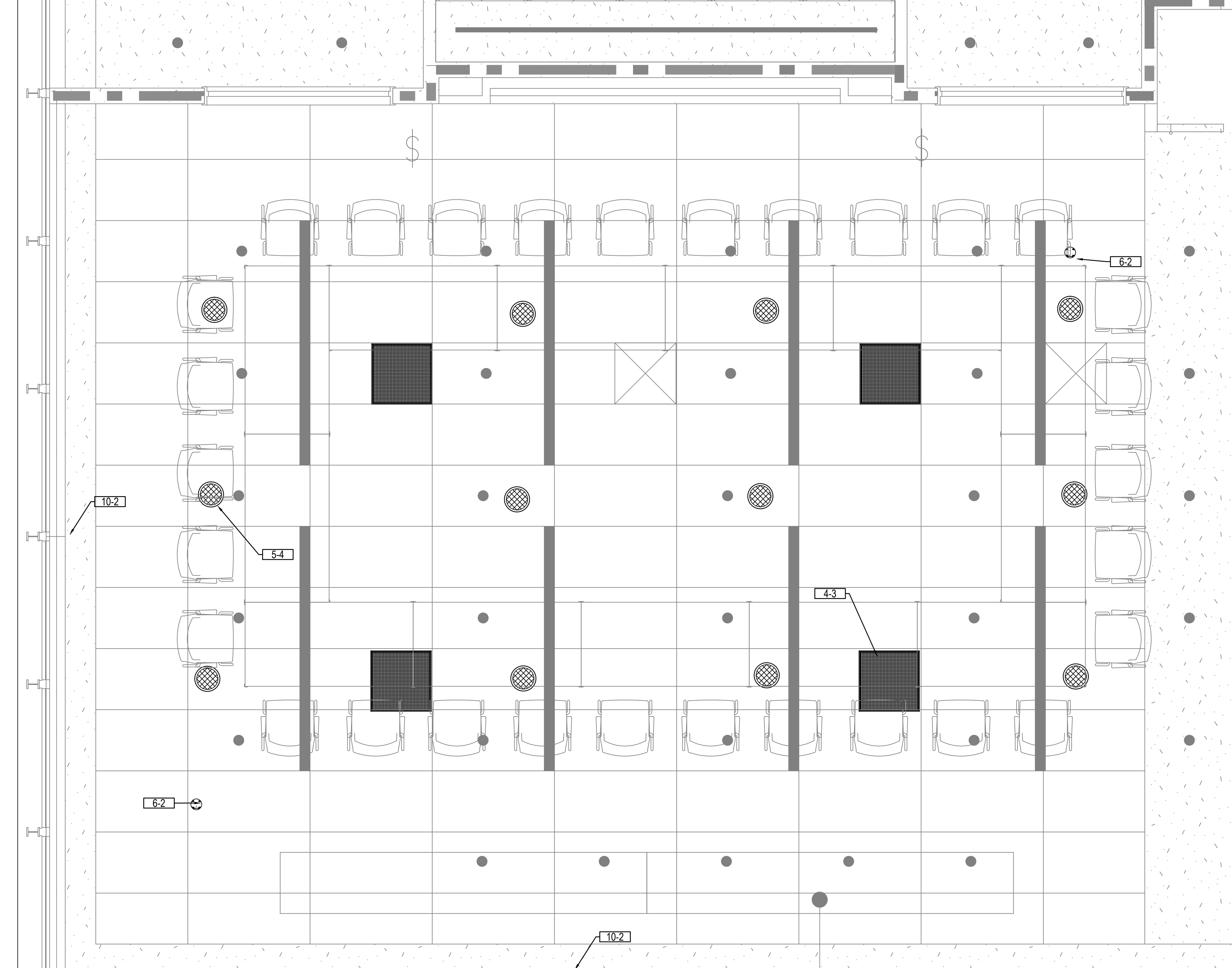
2.2 SECTION AND ELEVATION
1/2"=1'-0"
SMALL CONFERENCE ROOM - TYPICAL 16M12, 16M14



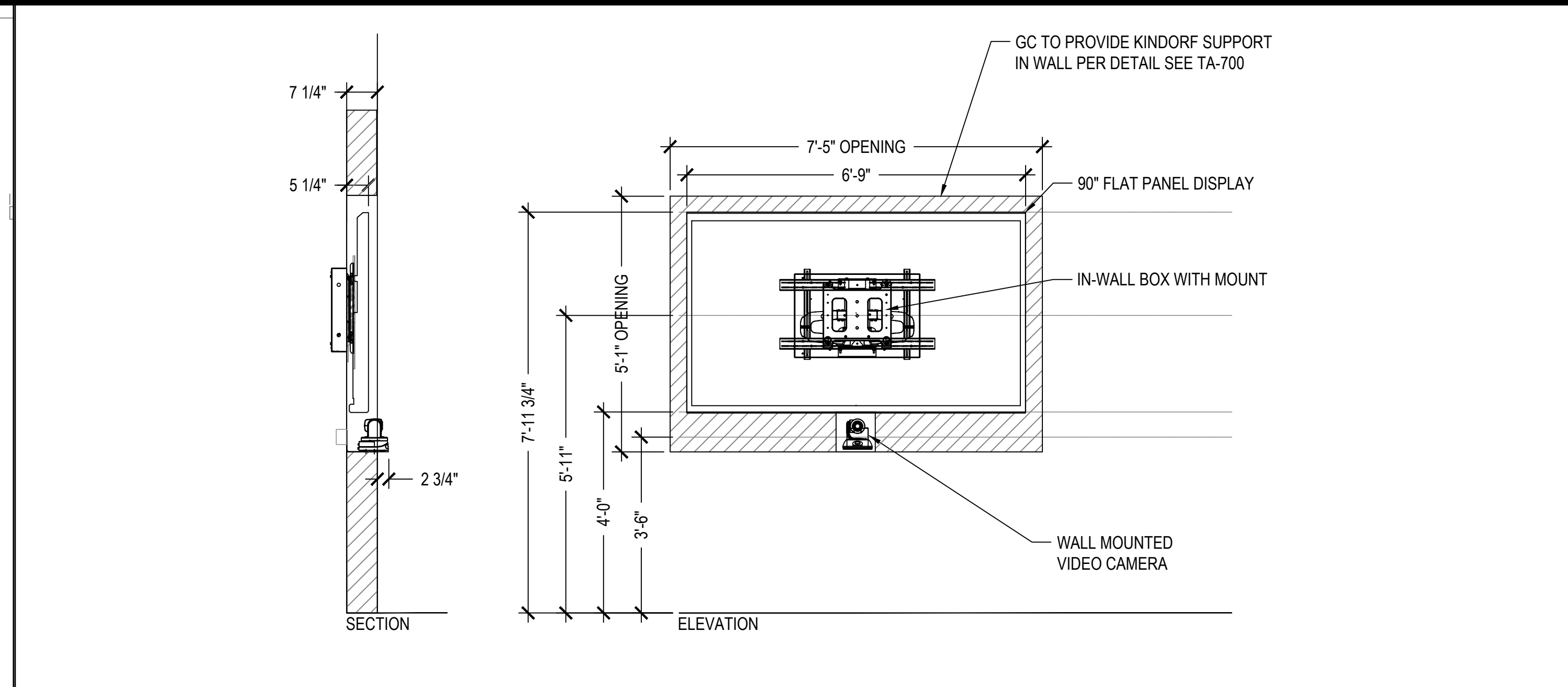
2.3 CONDUIT RISER DIAGRAM
1/2"=1'-0"
SMALL CONFERENCE ROOM - TYPICAL 16M12, 16M14



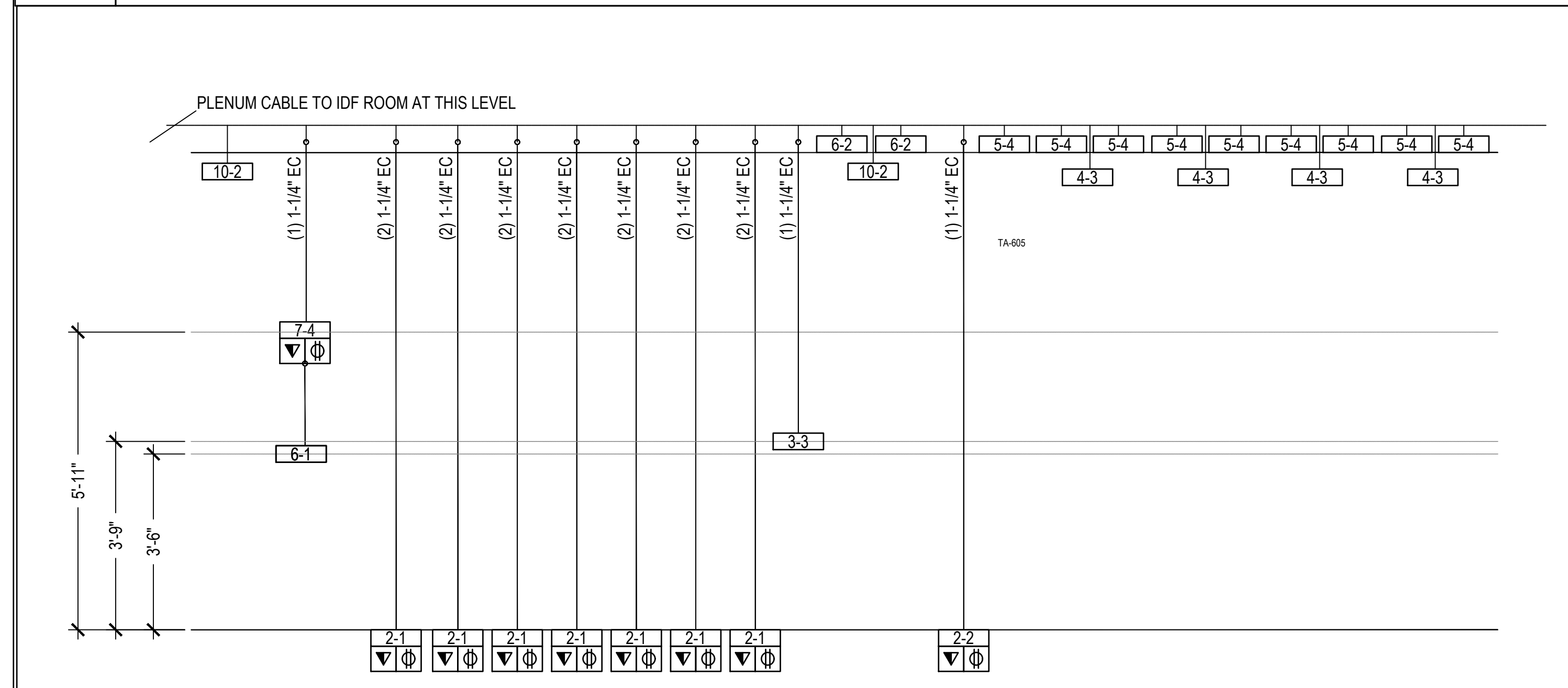
1.0 ENLARGED FACILITY PLAN
MULTIPURPOSE ROOM 16P02
1/2"=1'-0"



1.1 ENLARGED REFLECTED CEILING PLAN
MULTIPURPOSE ROOM 16P02
1/2"=1'-0"



1.2 SECTION AND ELEVATION
MULTIPURPOSE ROOM 16P02
1/2"=1'-0"



1.3 CONDUIT RISER DIAGRAM
MULTIPURPOSE ROOM 16P02
1/2"=1'-0"

JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-1	WIREMOLD 8AT	EC	AV FLOOR CONNECTIONS	SOLID CONDUIT FROM POKE THRU TO CEILING ON SAME FLOOR
2-2	PULL AREA THRU CONDUIT STUB UP	EC	AV DEVICE CONNECTIONS	STUB CONCEALED BY FURNITURE
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
3-3	3 GANG	EC	ROOM CONTROL TOUCH PANEL	
4-3	PULL AREA ONLY	AV	CEILING MICROPHONE ARRAY	FITS 2X2 CEILING TILE OPENING
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
6-1	2 GANG	EC	WALL MOUNTED CAMERA	SHELF MOUNTS TO GANG BOX
6-2	PULL AREA ONLY	AV	CEILING MOUNTED CAMERA	RECESSED MOUNTING BRACKET
7-4	CHIEF PAC501	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
10-2	PULL AREA ONLY	GC	MOTORIZED SHADES	CONTACT CLOSURE

GENERAL NOTES:

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- REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
- FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.

SYMBOL	DESCRIPTION
1.#	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CREDENZA 1-3 LECTERN 1-4 PULL-OUT
2.#	CONNECTIVITY: 2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK PULL BOX
3.#	CONTROL/SCHEDULING: 3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED TOUCH KEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
4.#	AUDIO INPUT: 4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
5.#	AUDIO OUTPUT: 5-1 WALL MOUNTED LOUDSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUDSPEAKER 5-4 CEILING RECESSED LOUDSPEAKER
6.#	VIDEO ORIGIN/SOURCE: 6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
7.#	VIDEO DISPLAY (TYPE 1): 7-1 (65") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X2) 4-55" DISPLAYS 7-9 (65") CEILING MOUNTED FLAT PANEL
8.#	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR; POLE MOUNTED 8-2 VIDEO PROJECTOR; ON MOTORIZED LIFT
9.#	VIDEO DISPLAY (TYPE 3): 9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#") WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#") CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
10.#	MISCELLANEOUS: 10-1 BLACKOUT SHADES; MANUAL 10-2 BLACKOUT SHADES; MOTORIZED 10-3 PC (OFE) 10-4 LAPTOP (OFE)

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3/4/2017	ISSUE FOR BID, 30%
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

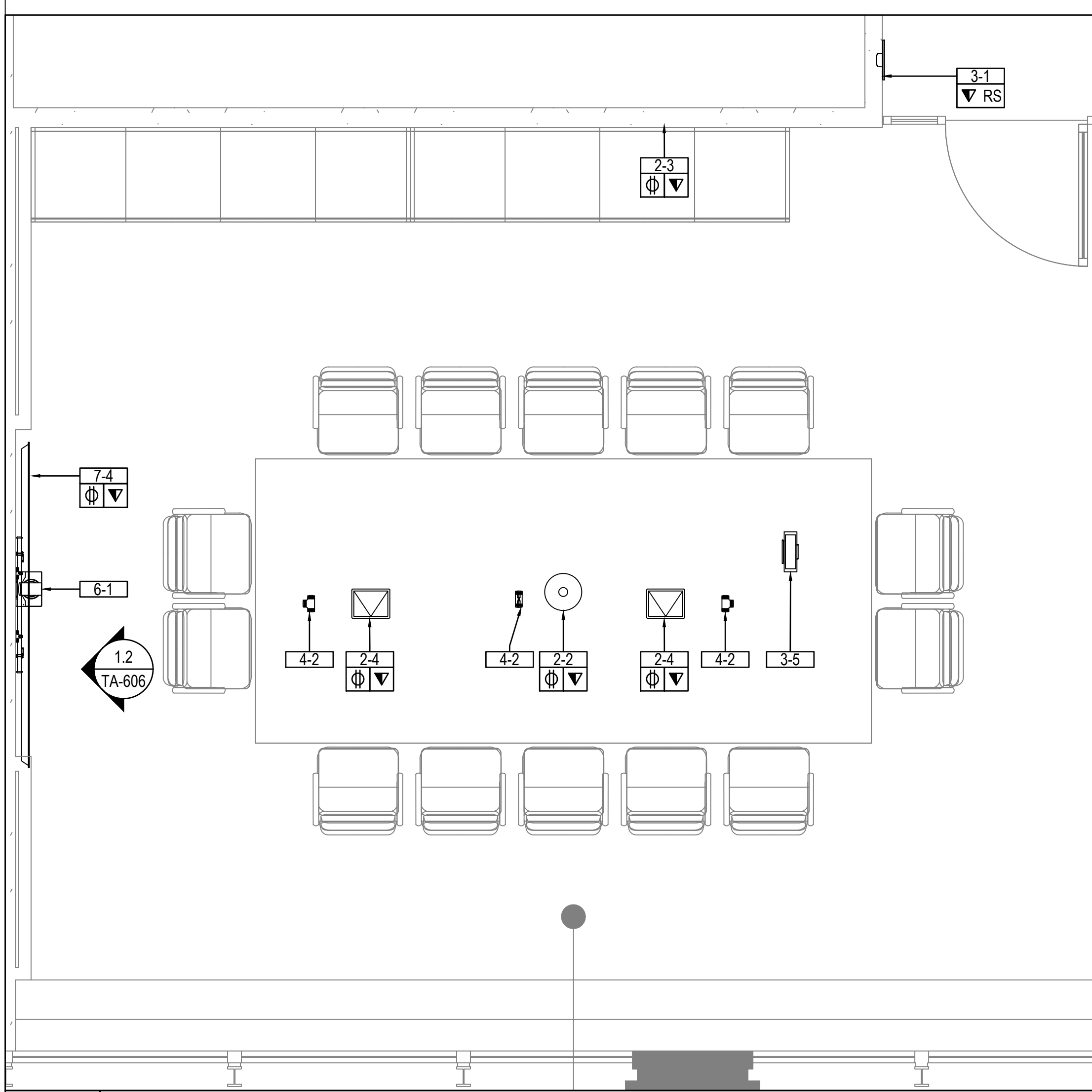
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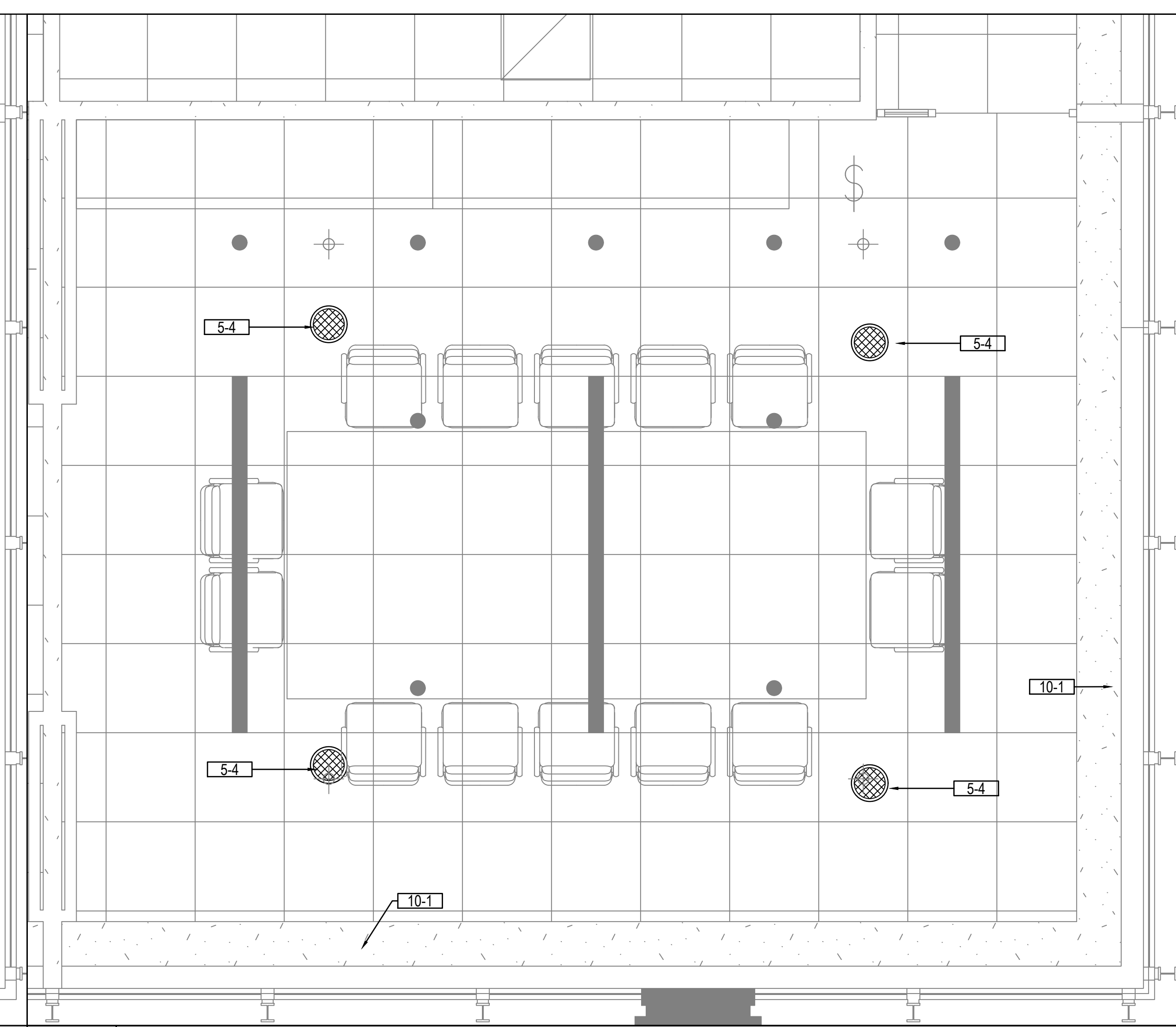
Scale
1/2" = 1'-0"
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TA-605.00

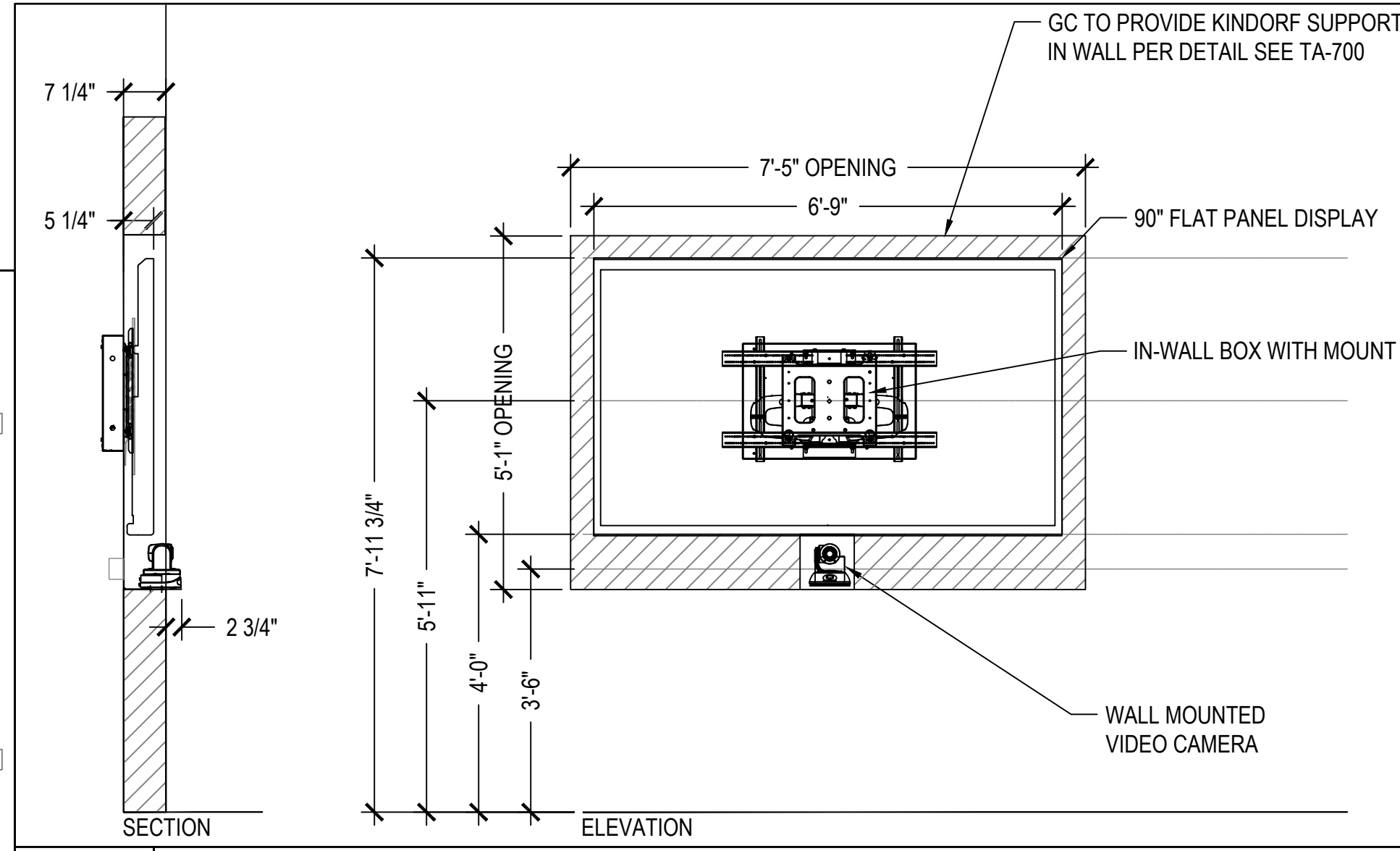
DRAWING NO. XX OF YY
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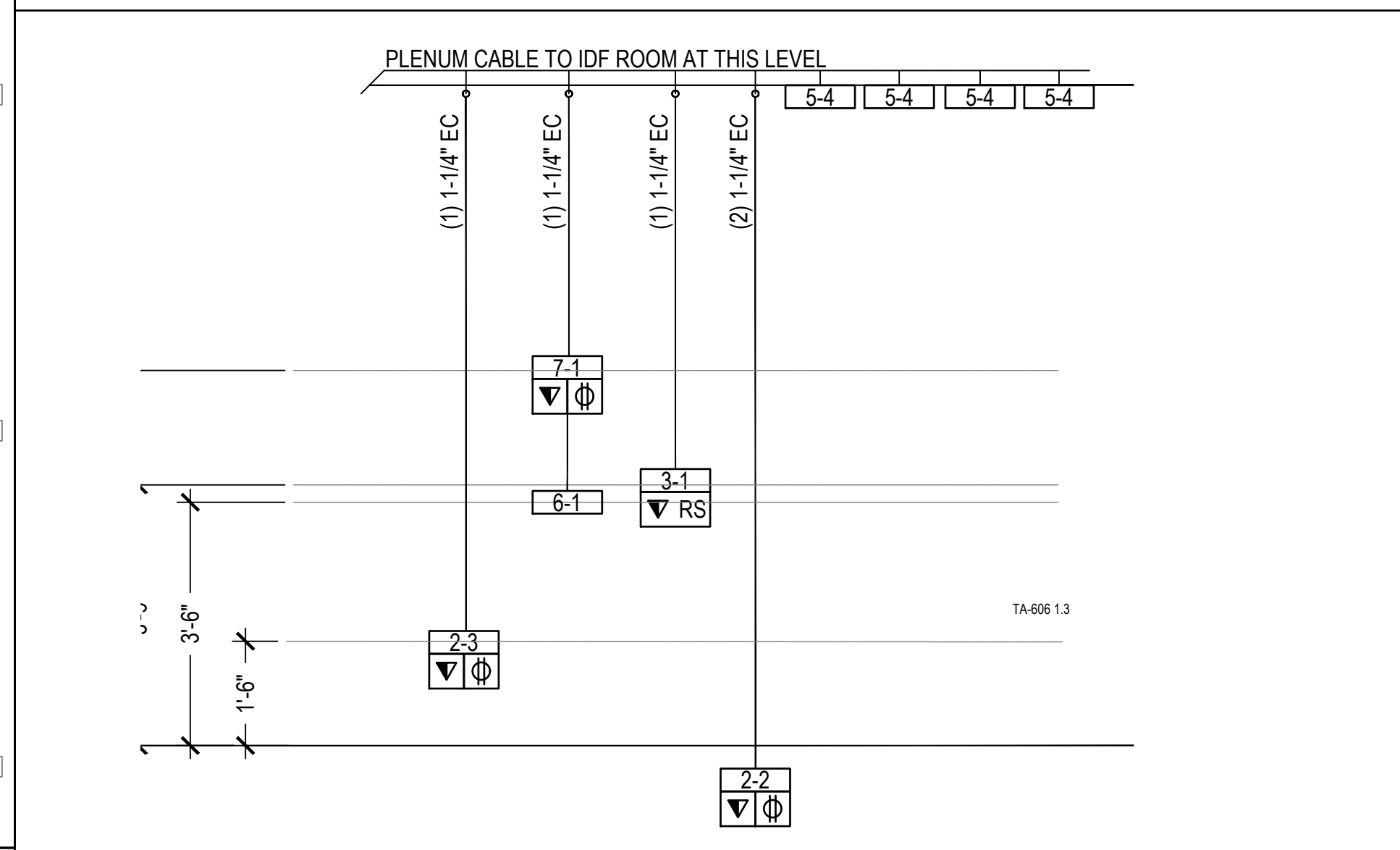
1.0 ENLARGED FACILITY PLAN
 LARGE CONFERENCE ROOM - 16P28
 1/2"=1'-0"



1.1 ENLARGED REFLECTED CEILING PLAN
 LARGE CONFERENCE ROOM - 16P28
 1/2"=1'-0"



1.2 SECTION AND ELEVATION
 LARGE CONFERENCE ROOM - 16P28
 1/2"=1'-0"



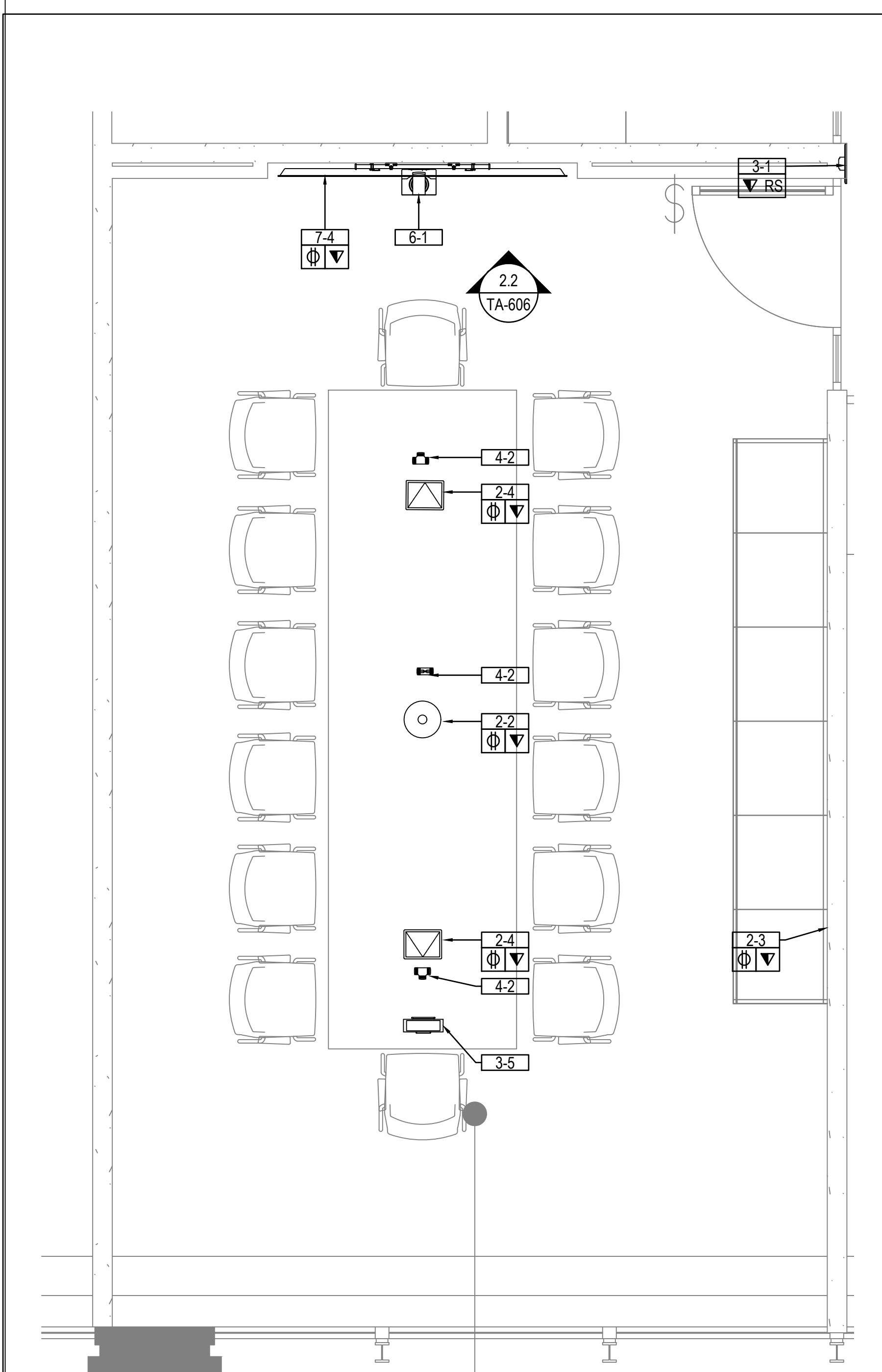
1.3 CONDUIT RISER DIAGRAM
 LARGE CONFERENCE ROOM - 16P28
 1/2"=1'-0"

SYMBOL	DESCRIPTION
1-#	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CREDENZA 1-3 LECTERN 1-4 PULL-OUT
2-#	CONNECTIVITY: 2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK PULL BOX
3-#	CONTROL/SCHEDULING: 3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED BUTTON/KEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
4-#	AUDIO INPUT: 4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
5-#	AUDIO OUTPUT: 5-1 WALL MOUNTED LOUSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUSPEAKER 5-4 CEILING RECESSED LOUSPEAKER
6-#	VIDEO ORIGIN/SOURCE: 6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
7-#	VIDEO DISPLAY (TYPE 1): 7-1 (65") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X) 4-55" DISPLAYS 7-9 (55") CEILING MOUNTED FLAT PANEL
8-#	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR; POLE MOUNTED 8-2 VIDEO PROJECTOR; ON MOTORIZED LIFT
9-#	VIDEO DISPLAY (TYPE 3): 9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#") WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#") CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
10-#	MISCELLANEOUS: 10-1 BLACKOUT SHADES; MANUAL 10-2 BLACKOUT SHADES; MOTORIZED 10-3 PC (OFE) 10-4 LAPTOP (OFE)

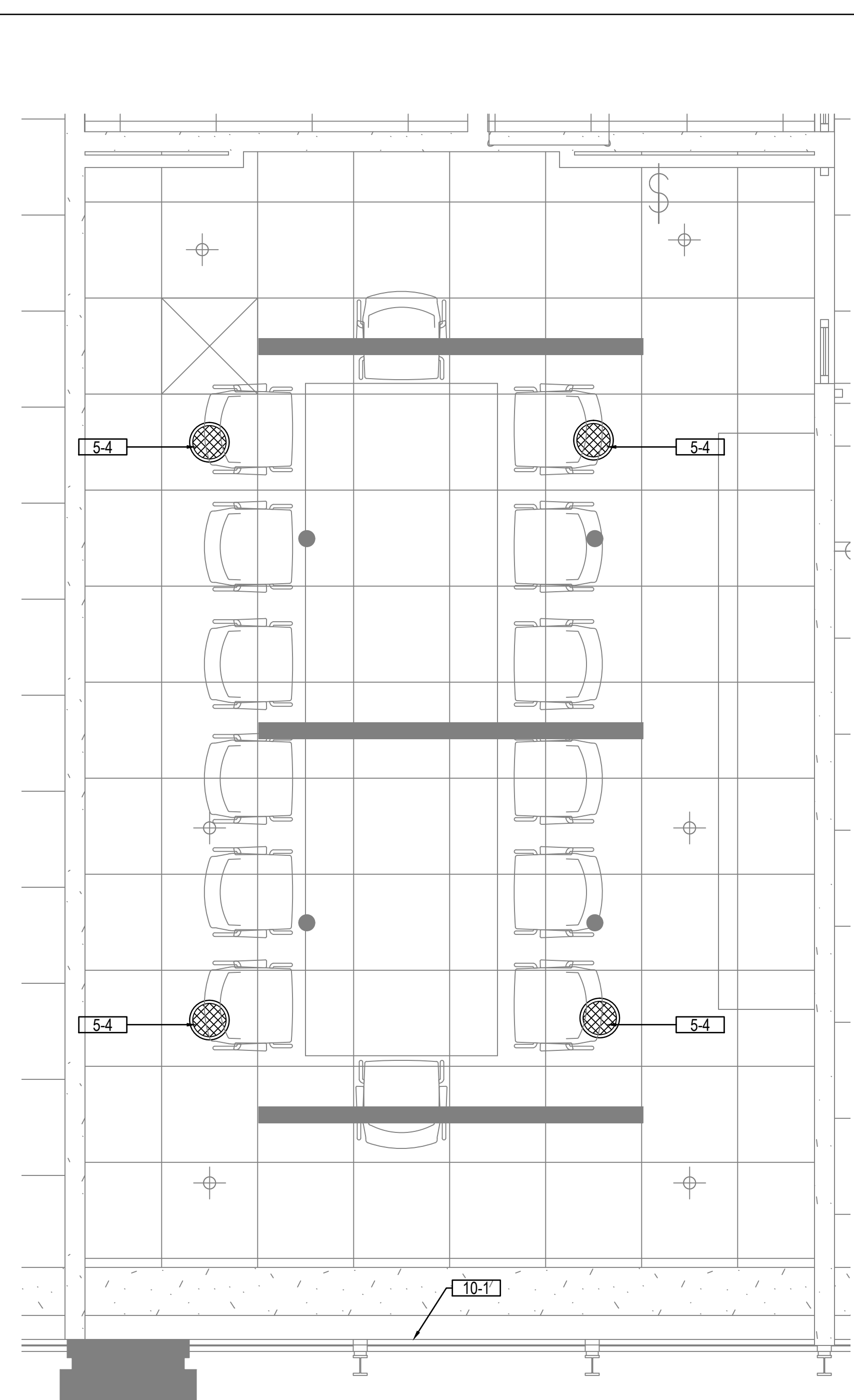
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-1	WIREMOLD BAT	EC	AV FLOOR CONNECTIONS	SOLID CONDUIT FROM POKE THRU TO CEILING ON SAME FLOOR
2-2	PULL AREA THRU CONDUIT STUB UP	EC	AV DEVICE CONNECTIONS	STUB CONCEALED BY FURNITURE
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
3-3	3 GANG	EC	ROOM CONTROL TOUCH PANEL	
4-3	PULL AREA ONLY	AV	CEILING MICROPHONE ARRAY	FITS 2X2 CEILING TILE OPENING
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
6-1	2 GANG	EC	WALL MOUNTED CAMERA	SHELF MOUNTS TO GANG BOX
6-2	PULL AREA ONLY	AV	CEILING MOUNTED CAMERA	RECESSED MOUNTING BRACKET
7-4	CHIEF PAC501	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
10-2	PULL AREA ONLY	GC	MOTORIZED SHADES	CONTACT CLOSURE

Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALTY PERMIT
3/4/2017	ISSUE FOR BID, 30% AF
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

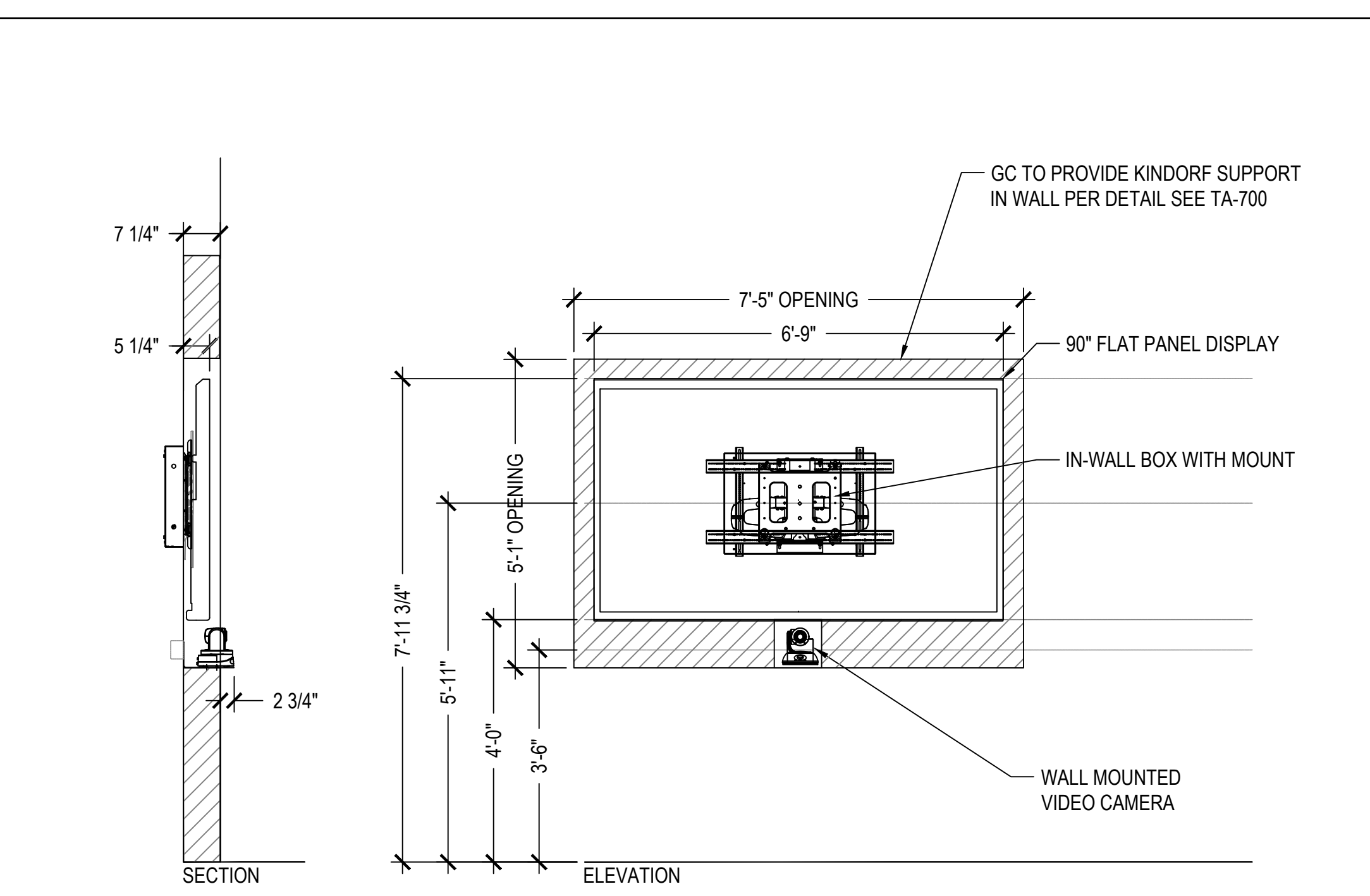
GENERAL NOTES:
 1. THIS DRAWING INDICATES CONNECTIVITY OF CONDUIT, JUNCTION BOXES, AND POINTS OF AUDIOVISUAL SYSTEMS CONNECTIVITY ONLY. ACTUAL PATHS OF CONDUITS TO BE DETERMINED BY ELECTRICAL CONTRACTOR.
 2. REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
 3. FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.



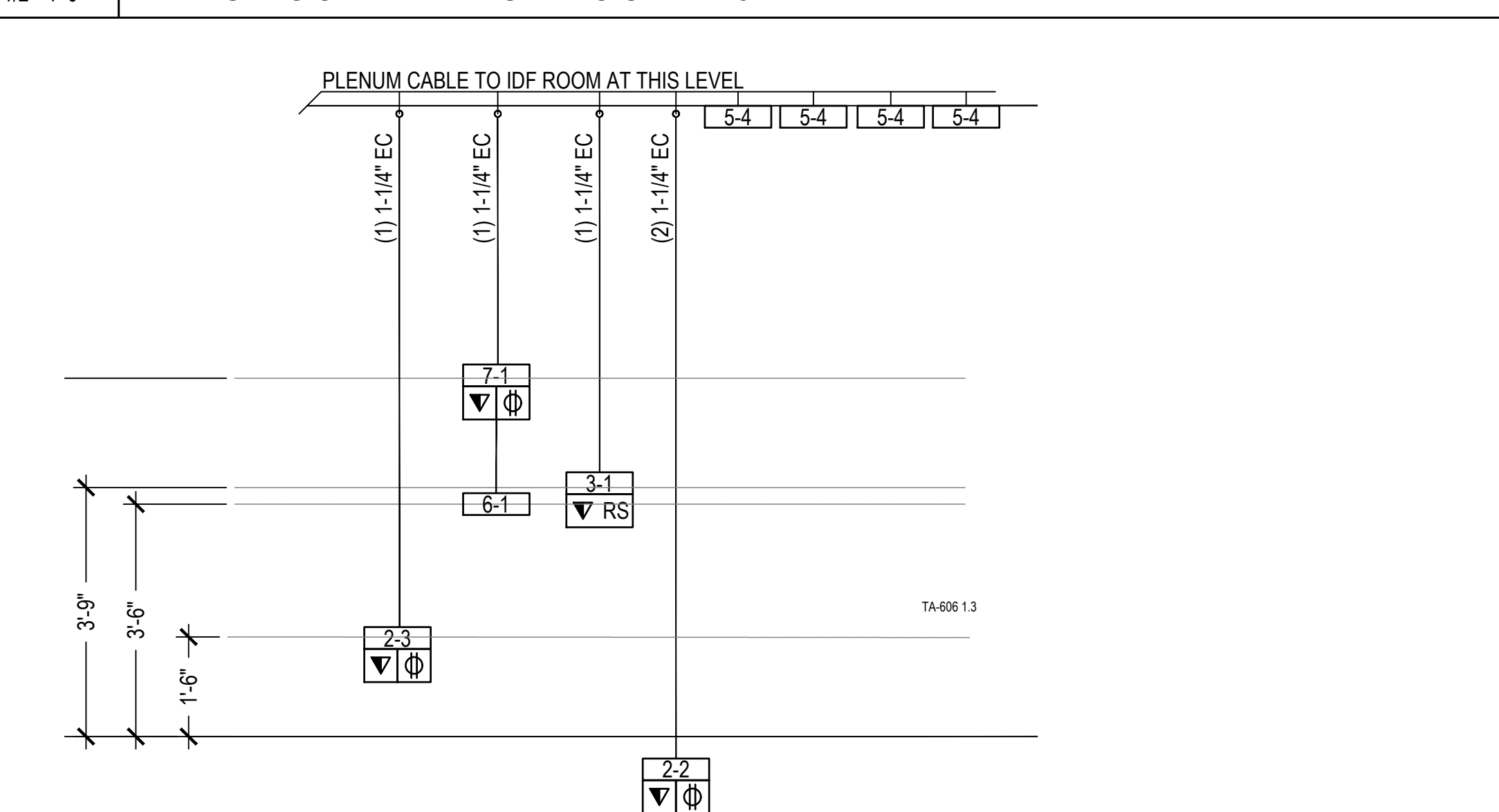
2.0 ENLARGED FACILITY PLAN
 LARGE CONFERENCE ROOM - 16P21
 1/2"=1'-0"



2.1 ENLARGED REFLECTED CEILING PLAN
 LARGE CONFERENCE ROOM - 16P21
 1/2"=1'-0"



2.2 SECTION AND ELEVATION
 LARGE CONFERENCE ROOM - 16P21
 1/2"=1'-0"



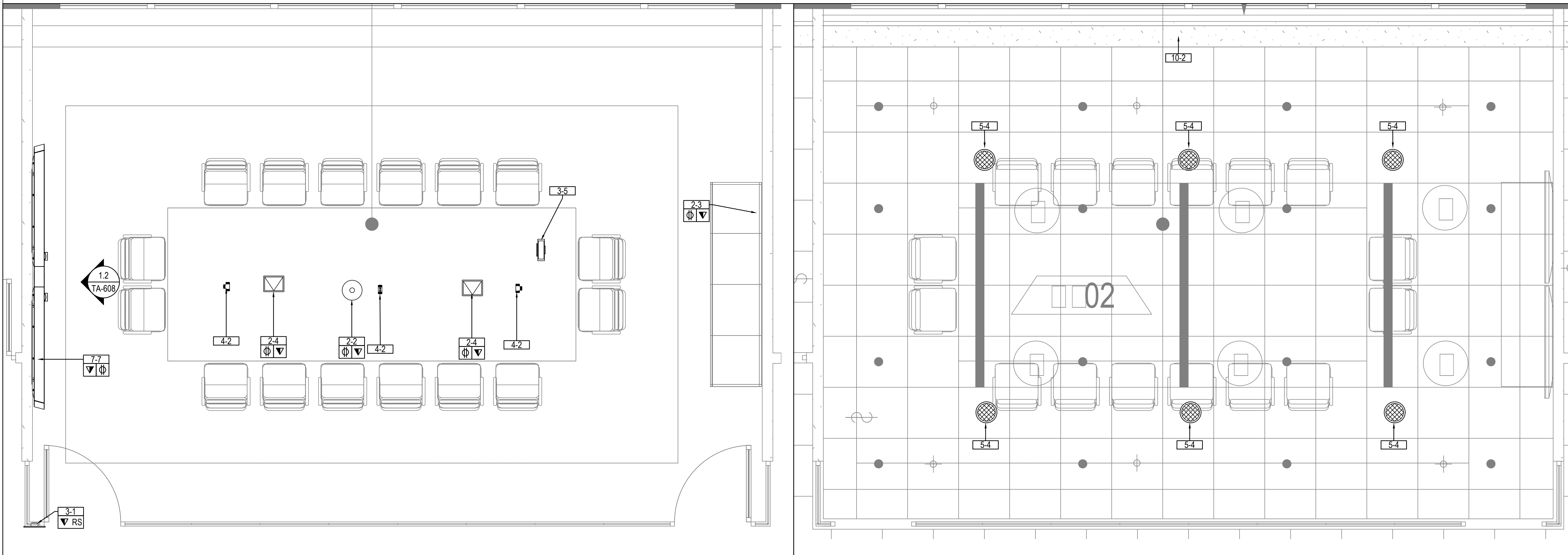
2.3 CONDUIT RISER DIAGRAM
 LARGE CONFERENCE ROOM - 16P21
 1/2"=1'-0"

Seal / Signature

Project Name
OGS / NYS OAG
 Project Number
06.0069.000
 Description
DRAWING TITLE
AUDIOVISUAL ENLARGED

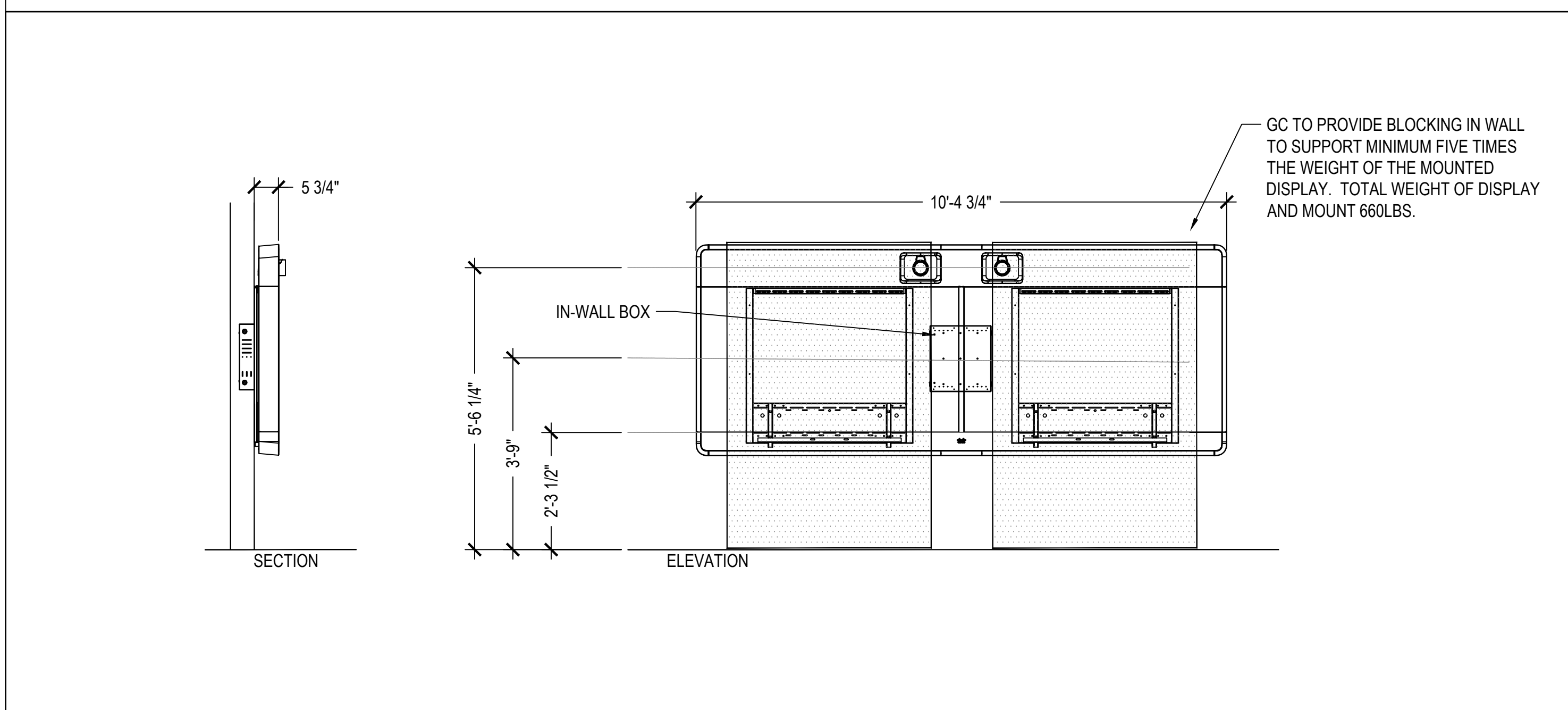
Scale
 1/2" = 1'-0"
 0 2 4 8 16
TA-606.00
 DRAWING NO. XX OF YY

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
EQUIPMENT RACKS:	
1-#	1-1 FULL HEIGHT 1-2 CREDENZA 1-3 LECTERN 1-4 PULL-OUT
CONNECTIVITY:	
2-#	2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK/PULL BOX
CONTROL/SCHEDULING:	
3-#	3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED BUTTON/KEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
AUDIO INPUT:	
4-#	4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
AUDIO OUTPUT:	
5-#	5-1 WALL MOUNTED LOUDSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUDSPEAKER 5-4 CEILING RECESSED LOUDSPEAKER
VIDEO ORIGIN/SOURCE:	
6-#	6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
VIDEO DISPLAY (TYPE 1):	
7-#	7-1 (65") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X2) 4-55" DISPLAYS 7-9 (55") CEILING MOUNTED FLAT PANEL
VIDEO DISPLAY (TYPE 2):	
8-#	8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 VIDEO PROJECTOR, ON MOTORIZED LIFT
VIDEO DISPLAY (TYPE 3):	
9-#	9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#") WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#") CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
MISCELLANEOUS:	
10-#	10-1 BLACKOUT SHADES, MANUAL 10-2 BLACKOUT SHADES, MOTORIZED 10-3 PC (OFF) 10-4 LAPTOP (OFF)

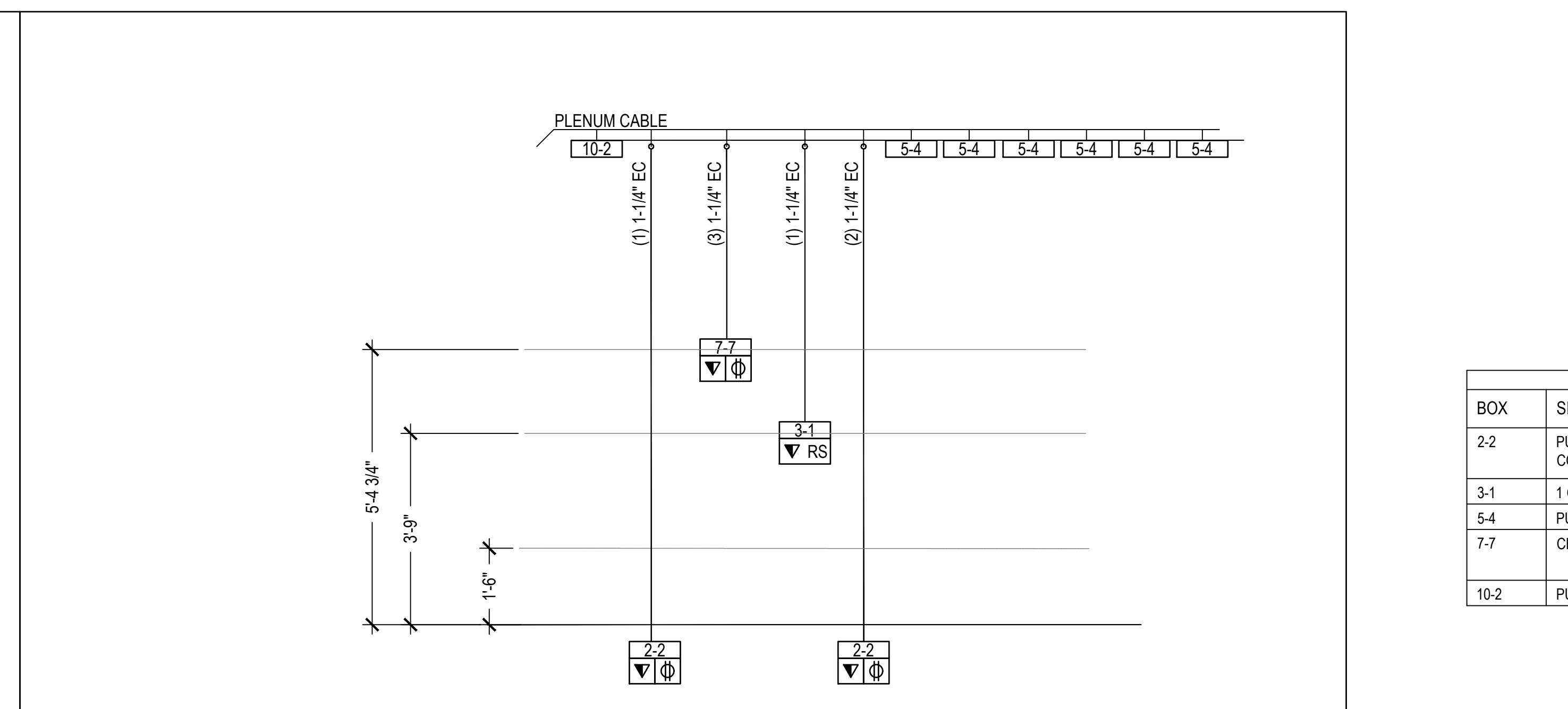


1.0 ENLARGED FACILITY PLAN
 1/2"=1'-0"
 LARGE CONFERENCE ROOM - 23A18

1.1 ENLARGED REFLECTED CEILING PLAN
 1/2"=1'-0"
 LARGE CONFERENCE ROOM - 23A18



1.2 SECTION AND ELEVATION
 1/2"=1'-0"
 LARGE CONFERENCE ROOM - 23A18



1.3 CONDUIT RISER DIAGRAM
 1/2"=1'-0"
 LARGE CONFERENCE ROOM - 23A18

GENERAL NOTES:

- THIS DRAWING INDICATES CONNECTIVITY OF CONDUIT, JUNCTION BOXES, AND POINTS OF AUDIOVISUAL SYSTEMS CONNECTIVITY ONLY. ACTUAL PATHS OF CONDUITS TO BE DETERMINED BY ELECTRICAL CONTRACTOR.
- REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
- FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.

JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-2	PULL AREA THRU CONDUIT STUB UP	EC	AV DEVICE CONNECTIONS	STUB CONCEALED BY FURNITURE
3-1	1 GANG HORIZONTAL	EC	ROOM SCHEDULER PANEL	
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
7-7	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
10-2	PULL AREA ONLY	GC	MOTORIZED SHADES	CONTACT CLOSURE

Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALI2 PERMIT
3/4/2017	ISSUE FOR BID, 30%
4/6/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

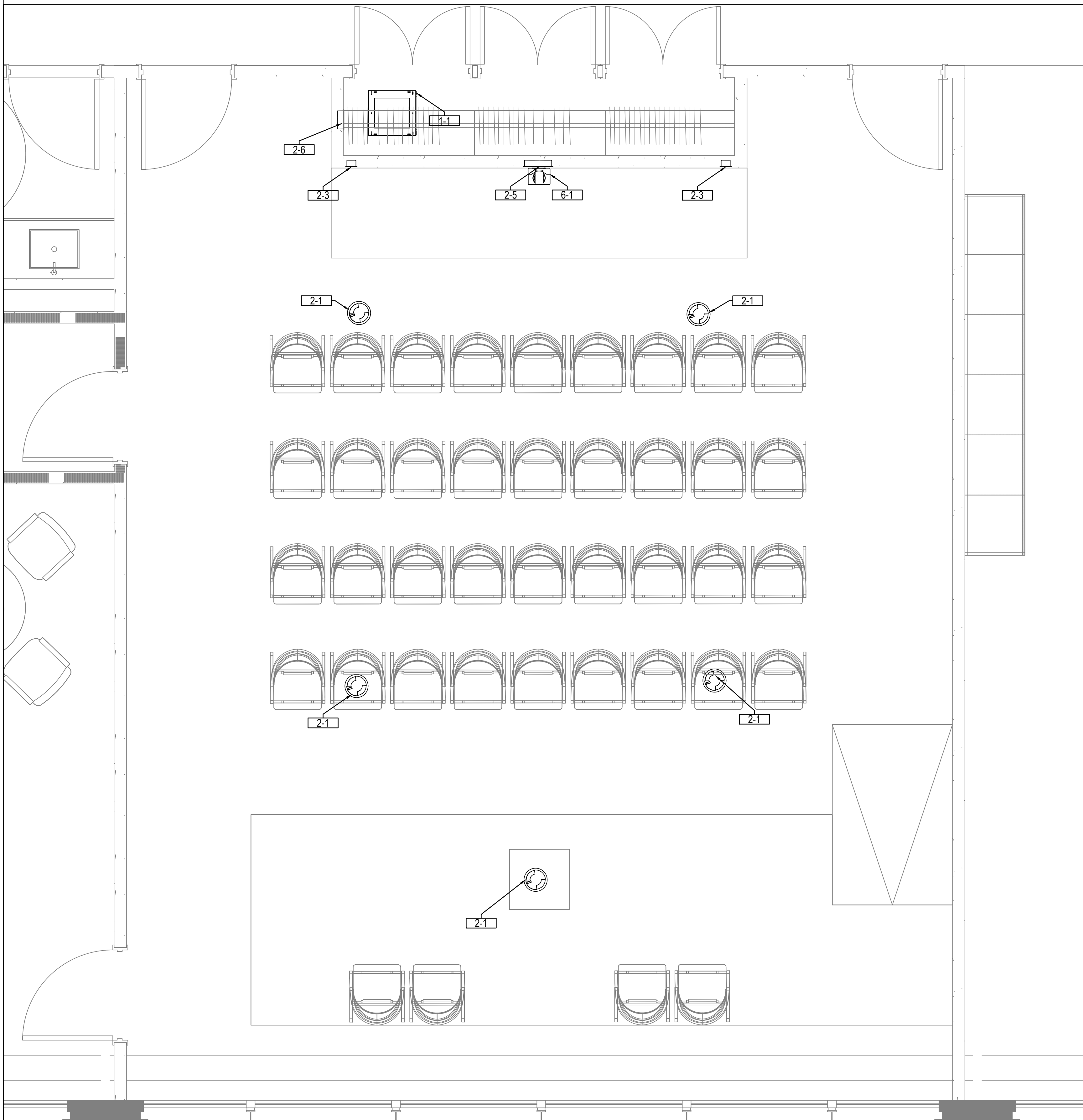
Description
DRAWING TITLE

AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER

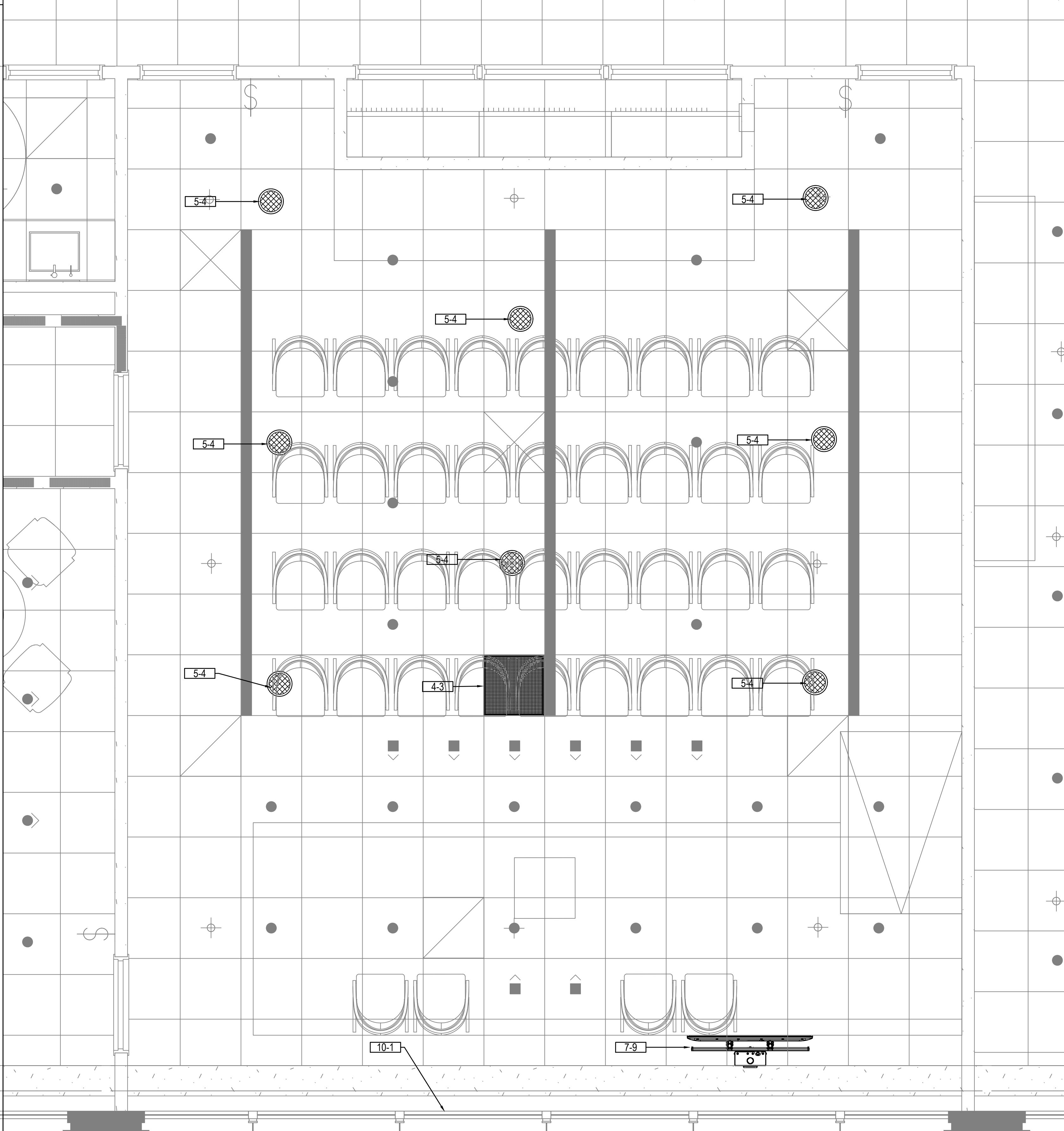
Scale
1/2" = 1'-0"

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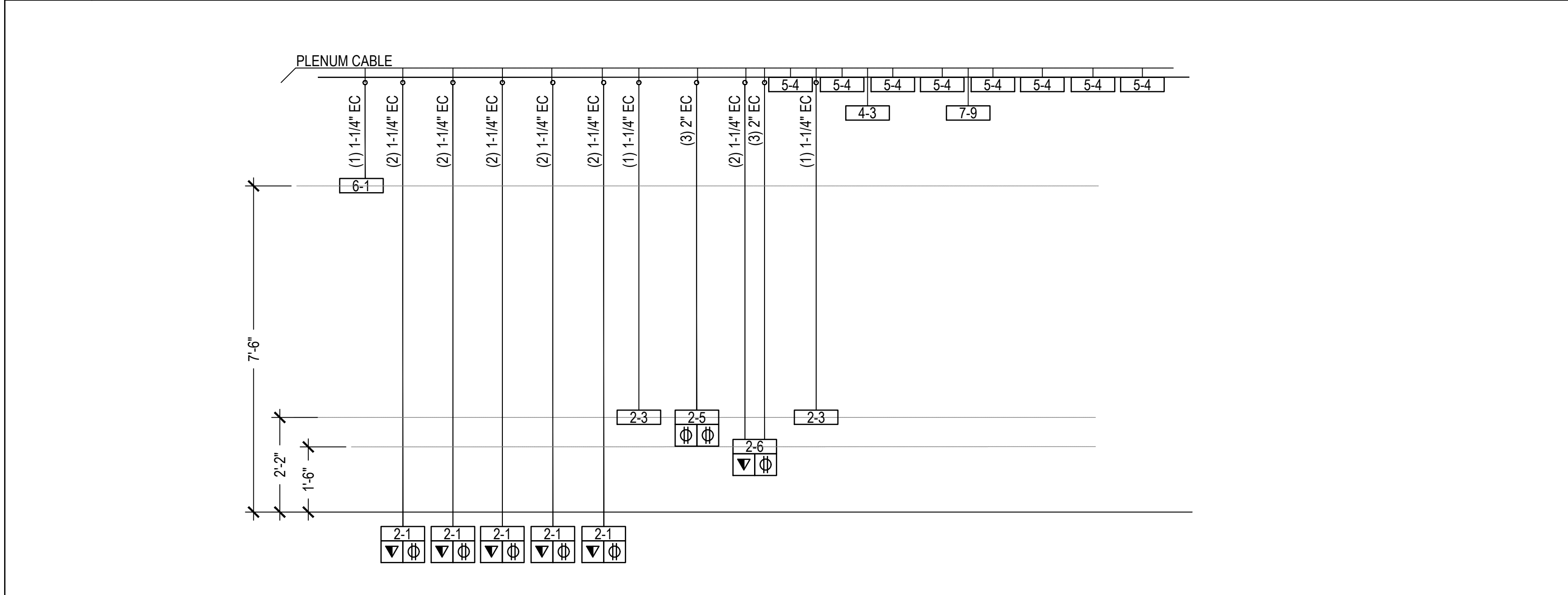
TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
EQUIPMENT RACKS	
1-#	1-1 FULL HEIGHT 1-2 CREDENZA 1-3 LECTERN 1-4 PULL-OUT
CONNECTIVITY	
2-#	2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK PULL BOX
CONTROL/SCHEDULING	
3-#	3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED BUTTONKEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
AUDIO INPUT	
4-#	4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
AUDIO OUTPUT	
5-#	5-1 WALL MOUNTED LOUDSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUDSPEAKER 5-4 CEILING RECESSED LOUDSPEAKER
VIDEO ORIGIN/SOURCE	
6-#	6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
VIDEO DISPLAY (TYPE 1)	
7-#	7-1 (65") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X2) 4-55" DISPLAYS 7-9 (55") CEILING MOUNTED FLAT PANEL
VIDEO DISPLAY (TYPE 2)	
8-#	8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 VIDEO PROJECTOR, ON MOTORIZED LIFT
VIDEO DISPLAY (TYPE 3)	
9-#	9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#") WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#") CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
MISCELLANEOUS	
10-#	10-1 BLACKOUT SHADES, MANUAL 10-2 BLACKOUT SHADES, MOTORIZED 10-3 PC (OFF) 10-4 LAPTOP (OFF)



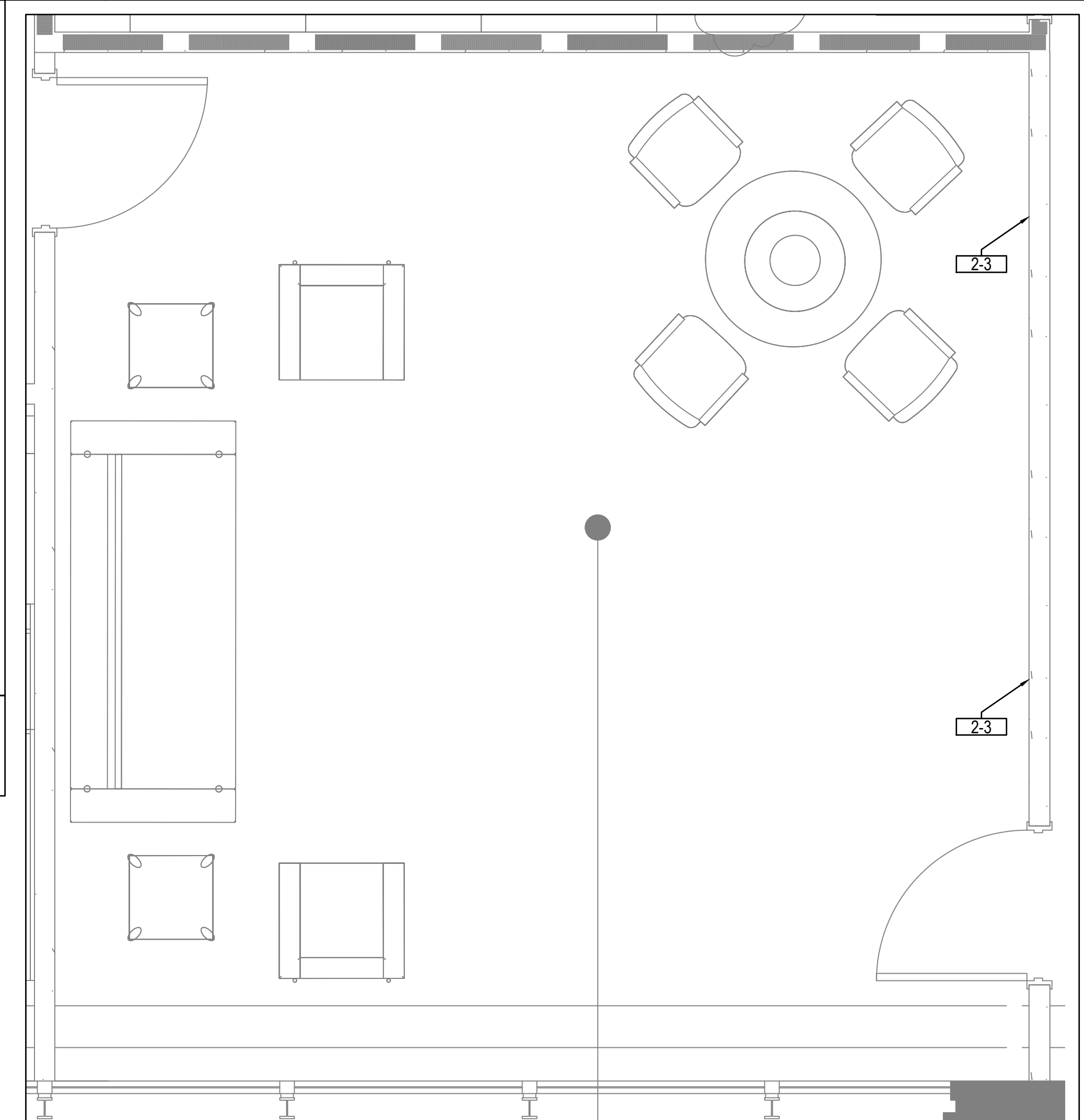
1.0 ENLARGED FACILITY PLAN PRESS ROOM
 1/2"=1'-0"



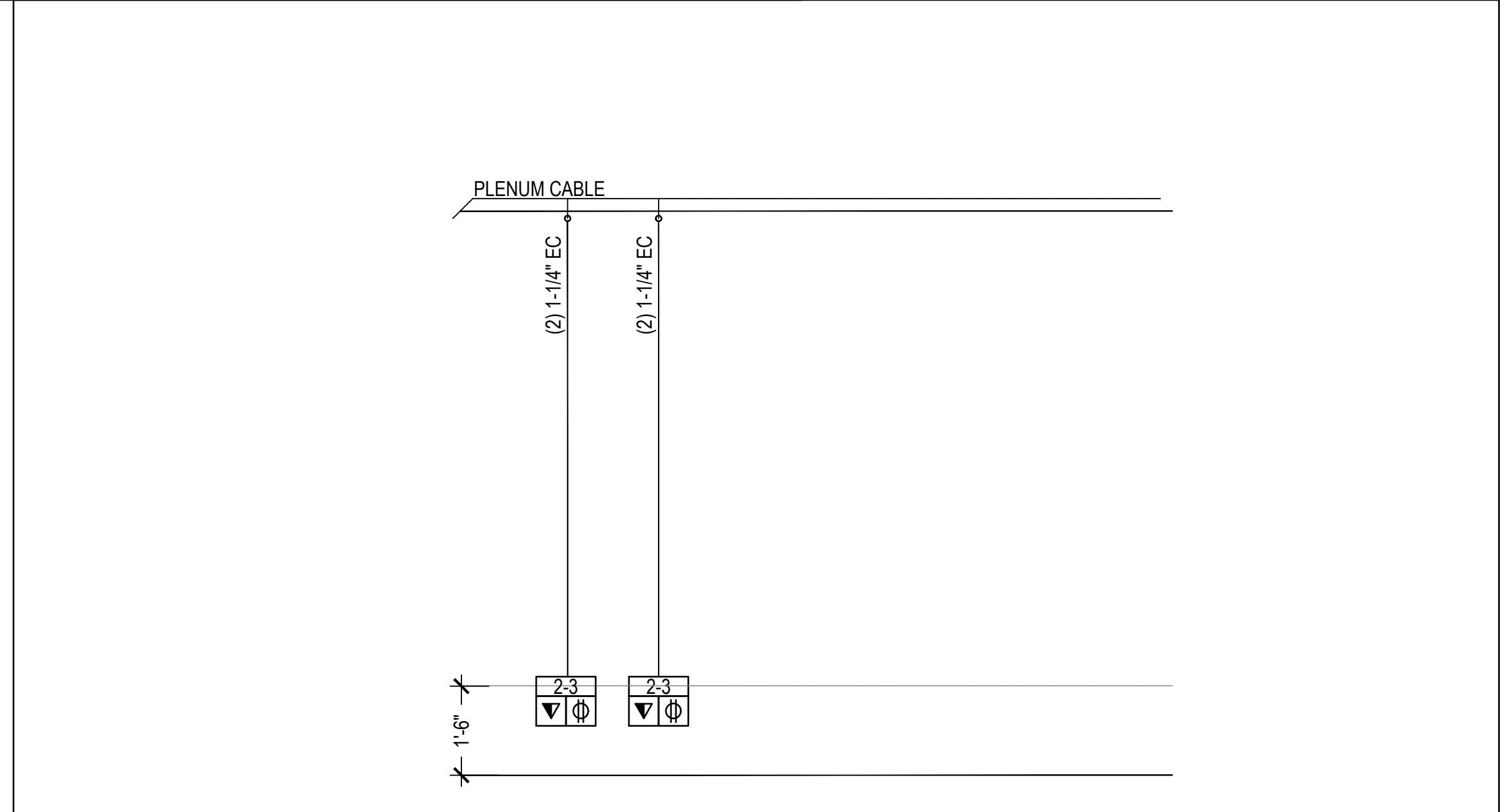
1.1 ENLARGED REFLECTED CEILING PLAN PRESS ROOM
 1/2"=1'-0"



1.2 CONDUIT RISER DIAGRAM PRESS ROOM
 1/2"=1'-0"



2.0 ENLARGED FACILITY PLAN GREEN ROOM
 1/2"=1'-0"



2.1 CONDUIT RISER DIAGRAM GREEN ROOM
 1/2"=1'-0"

JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-1	WIREMOLD BAT	EC	AV FLOOR CONNECTIONS	SOLID CONDUIT FROM FLOOR THRU TO CEILING ON SAME FLOOR
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
2-5	24" X 24" NEMA	EC	PRESS ROOM CONNECTIONS	CUSTOM PLATE
2-6	EC TO SIZE PER CONDUIT REQUIREMENTS	EC	EQUIPMENT RACK CONNECTIONS	
4-3	PULL AREA ONLY	AV	CEILING MICROPHONE ARRAY	FITS 2X2' CEILING TILE OPENING
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
6-1	2 GANG	EC	WALL MOUNTED CAMERA	SHELF MOUNTS TO GANG BOX
7-9	PULL AREA ONLY	AV	CEILING MOUNTED FLAT PANEL	SEE DETAIL ON TA-700

GENERAL NOTES:

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- REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
- FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.

JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-3	3 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE

Date	Description
3/29/2017	PROGRESS DESIGN DEVELOPMENT
4/14/2017	ISSUE FOR ALTY PERMIT
4/28/2017	ISSUE FOR BID, 30% AF
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

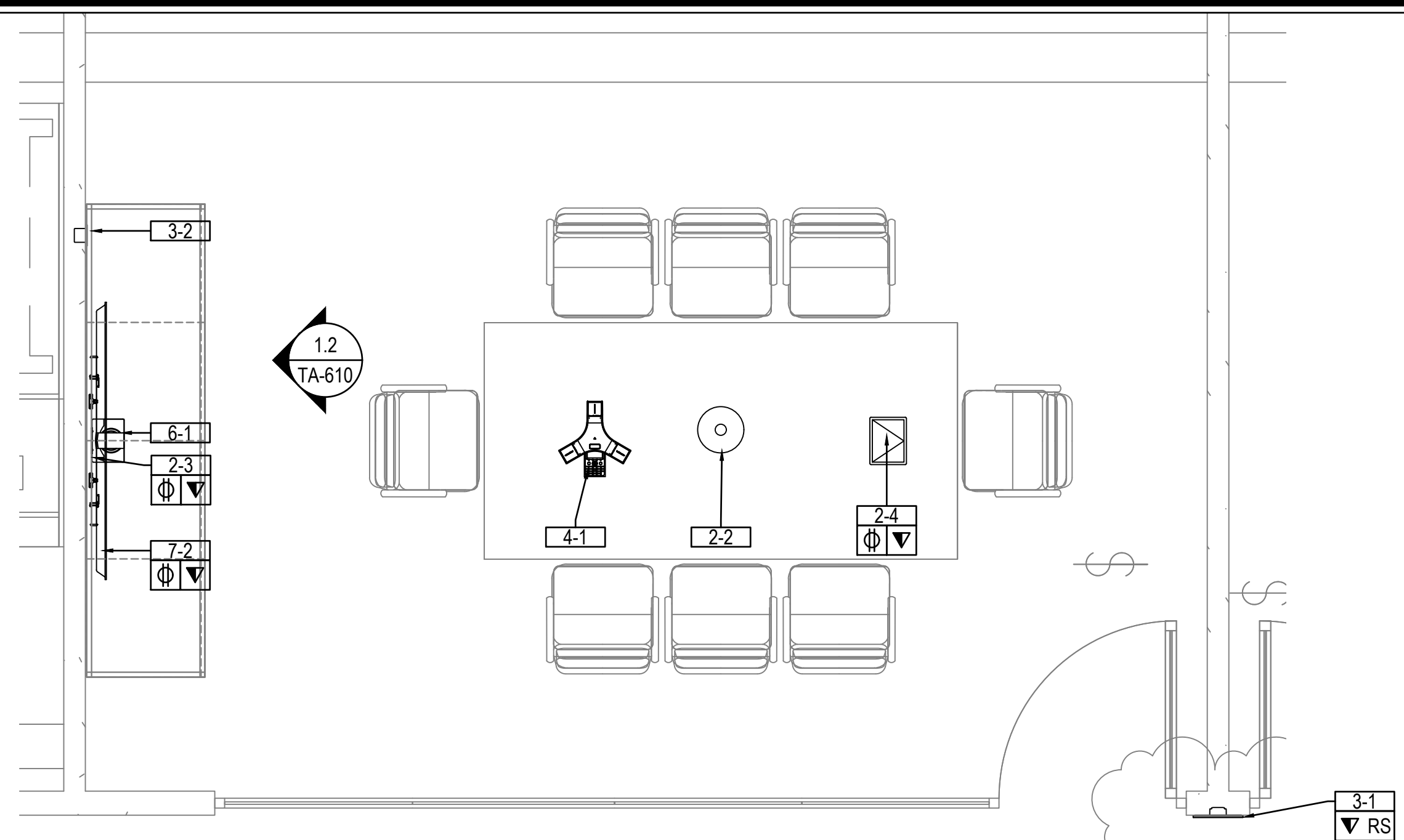
Project Number
06.0069.000

Description
DRAWING TITLE

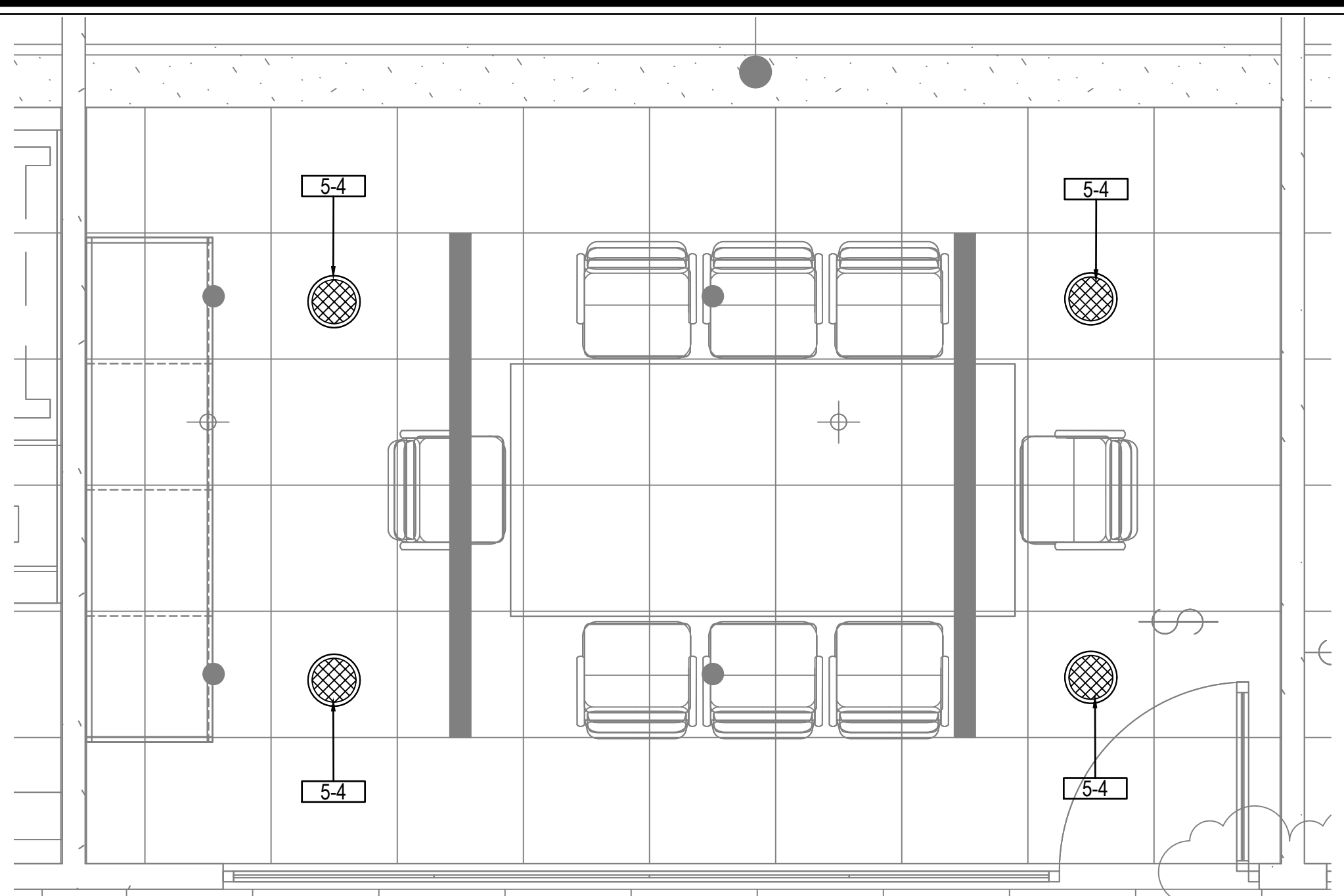
AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER

Scale
 1/2" = 1'-0"

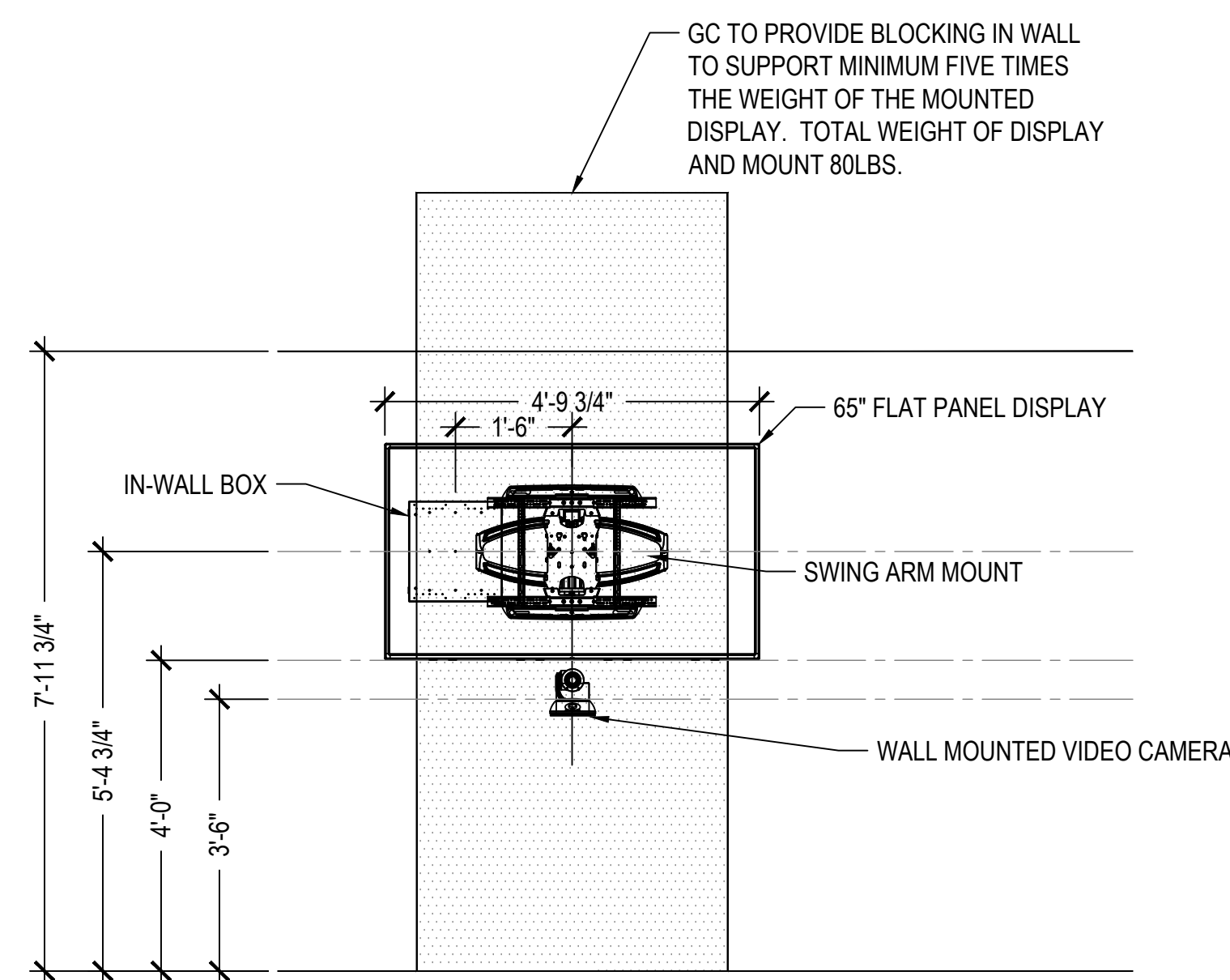
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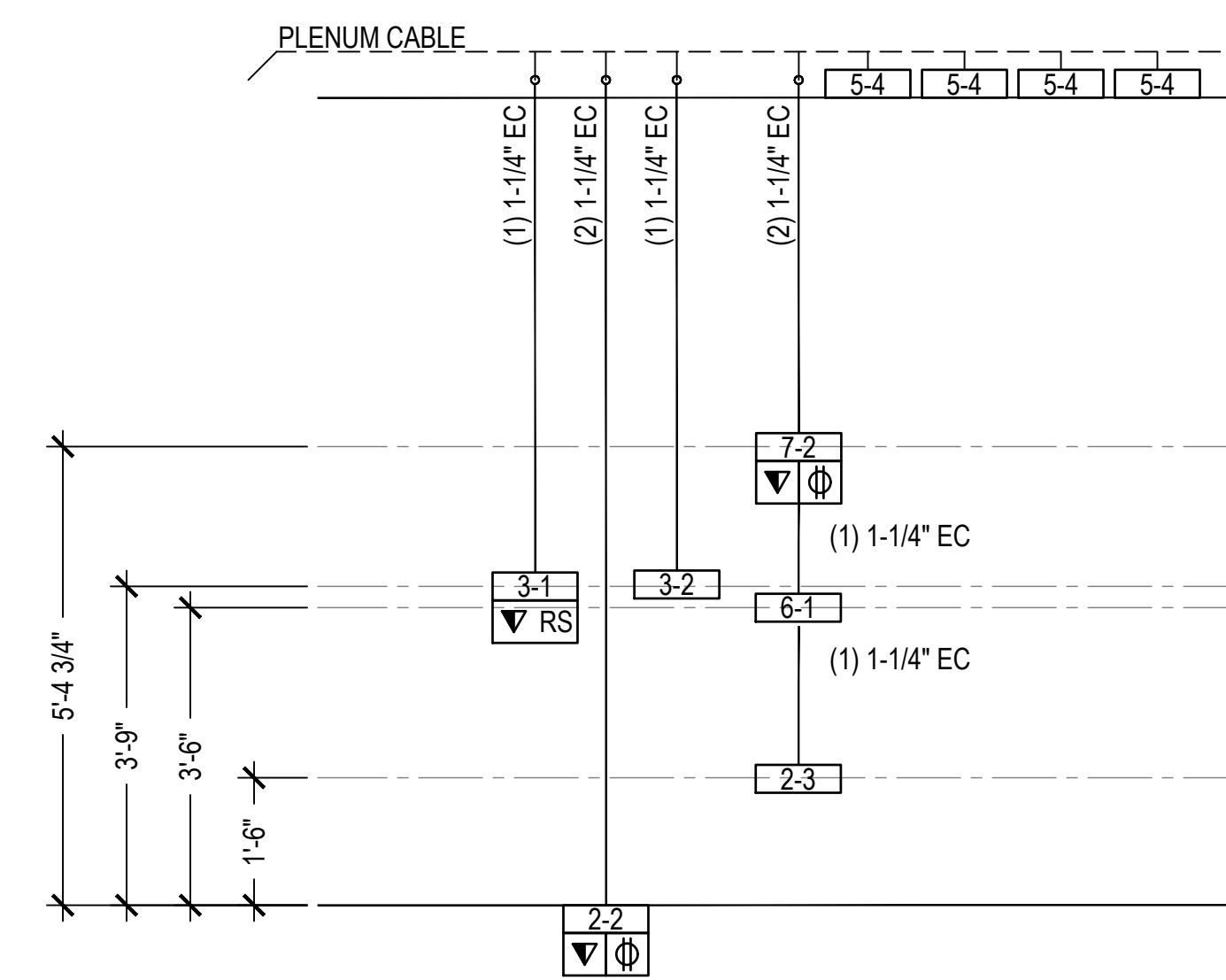
1.0 ENLARGED FACILITY PLAN MEDIUM CONFERENCE ROOM
1/2"=1'-0"
13A25,13F28, 14A24, 15A25, 16M23, 16M25, 17A18, 18A17, 19A17, 20A17, 21A17, 23A05



1.1 ENLARGED REFLECTED CEILING PLAN MEDIUM CONFERENCE ROOM
1/2"=1'-0"
13A25,13F28, 14A24, 15A25, 16M23, 16M25, 17A18, 18A17, 19A17, 20A17, 21A17, 23A05



1.2 SECTION AND ELEVATION MEDIUM CONFERENCE ROOM
1/2"=1'-0"
13A25,13F28, 14A24, 15A25, 16M23, 16M25, 17A18, 18A17, 19A17, 20A17, 21A17, 23A05

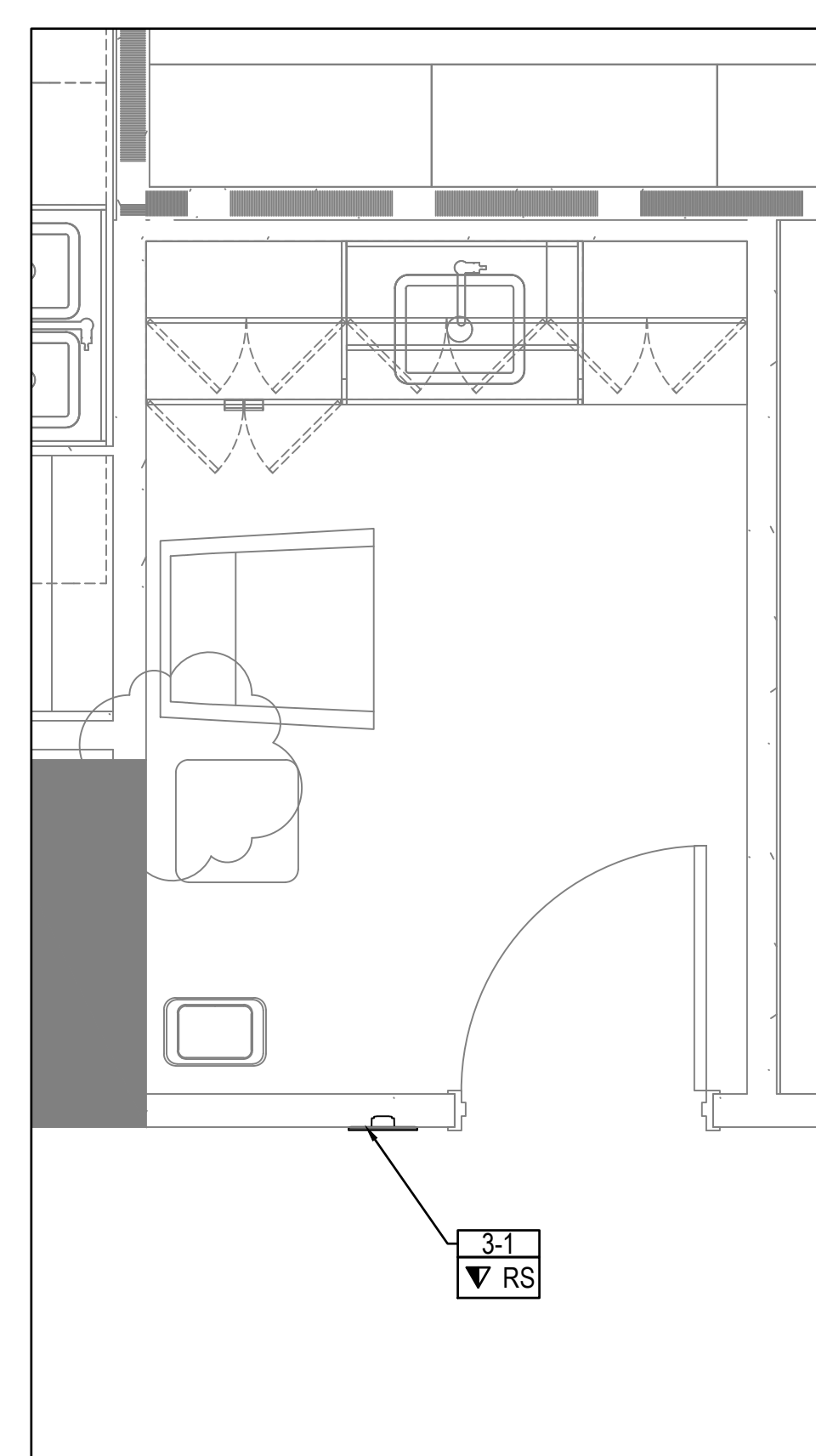


1.3 CONDUIT RISER DIAGRAM MEDIUM CONFERENCE ROOM
1/2"=1'-0"
13A25,13F28, 14A24, 15A25, 16M23, 16M25, 17A18, 18A17, 19A17, 20A17, 21A17, 23A05

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
1.#	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CREDEZZA 1-3 LECTERN 1-4 PULL-OUT
2.#	CONNECTIVITY: 2-1 FLOOR BOX 2-2 STUB-UP 2-3 WALL PLATE 2-4 TABLE HATCH 2-5 CUSTOM WALL PLATE 2-6 AV RACK PULL BOX
3.#	CONTROLS/SCHEDULING: 3-1 ROOM SCHEDULING PANEL 3-2 WALL MOUNTED BUTTONKEY PANEL 3-3 WALL MOUNTED TOUCH PANEL 3-4 WIRELESS TOUCH PANEL 3-5 WIRED TOUCH PANEL
4.#	AUDIO INPUT: 4-1 TABLETOP AUDIO CONFERENCE UNIT 4-2 TABLE MOUNTED MICROPHONE 4-3 CEILING MOUNTED MICROPHONE 4-4 WIRELESS MICROPHONE ANTENNA
5.#	AUDIO OUTPUT: 5-1 WALL MOUNTED LOUDSPEAKER 5-2 ASSISTIVE LISTENING EMITTER 5-3 CEILING MOUNTED LOUDSPEAKER 5-4 CEILING RECESSED LOUDSPEAKER
6.#	VIDEO ORIGIN/SOURCE: 6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX 6-2 CEILING MOUNTED CAMERA 6-3 OBSERVATION CAMERA
7.#	VIDEO DISPLAY (TYPE 1): 7-1 (55") WALL MOUNTED FLAT PANEL 7-2 (65") WALL MOUNTED FLAT PANEL 7-3 (75") WALL MOUNTED FLAT PANEL 7-4 (90") WALL MOUNTED FLAT PANEL 7-5 (42") WALL MOUNTED FLAT PANEL 7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT 7-8 VIDEO WALL (2X) 4-55" DISPLAYS 7-9 (55") CEILING MOUNTED FLAT PANEL
8.#	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR; POLE MOUNTED 8-2 VIDEO PROJECTOR; ON MOTORIZED LIFT
9.#	VIDEO DISPLAY (TYPE 3): 9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN 9-1W (#) WALL MOUNTED FRONT PROJECTION SCREEN 9-2 (#) CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
10.#	MISCELLANEOUS: 10-1 BLACKOUT SHADES, MANUAL 10-2 BLACKOUT SHADES, MOTORIZED 10-3 PC (OFE) 10-4 ADP (OFE)

JUNCTION BOX SCHEDULE				
BOX	SIZE-MODEL	PROVIDED BY	FUNCTION	NOTES
2-2	PULL AREA THRU CONDUIT STUB UP	EC	AV DEVICE CONNECTIONS	STUB CONCEALED BY FURNITURE
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
3-1	1 GANG HORIZONTAL	EC	ROOM SCHEDULING PANEL	
3-3	1 GANG HORIZONTAL	EC	ROOM CONTROL TOUCH PANEL	
4-1	PULL AREA ONLY	AV	TABLE CONFERENCE UNIT	
4-2	PULL AREA ONLY	AV	TABLE MICROPHONE	COORDINATE WITH ARCHITECT FOR PLACEMENT. REFER TO TABLE SHOP DRAWING
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE
6-1	2 GANG	EC	WALL MOUNTED CAMERA	SHELF MOUNTS TO GANG BOX
7-2	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
7-4	CHIEF PAC501	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS

GENERAL NOTES:
1. THIS DRAWING INDICATES CONNECTIVITY OF CONDUIT, JUNCTION BOXES, AND POINTS OF AUDIOVISUAL SYSTEMS CONNECTIVITY ONLY. ACTUAL PATHS OF CONDUITS TO BE DETERMINED BY ELECTRICAL CONTRACTOR.
2. REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
3. FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.



2.0 ENLARGED FACILITY PLAN WELLNESS ROOMS
1/2"=1'-0"
WELLNESS ROOM TYPICAL:
13J02, 14J02, 15J02, 16G03, 17J02, 18J02, 19J02, 20F02, 21E02, 23F02

FOSUN / SUMMIT GLORY
28 Liberty Street
New York, NY 10005
AG Floors 13-21 & 23

Gensler
1700 Broadway
Suite 400
New York, NY 10019
United States
Tel: 212.492.1400
Fax: 212.492.1472

Gardiner & Theobald Inc.
PROJECT & COST MANAGER
535 Fifth Avenue
3rd Floor
New York, NY 10017
United States
Tel: 212.661.6624

JB&B
MEP ENGINEERS
80 Pine Street
New York, NY 10005
United States
Tel: 212.530.9300

DeSimone Consulting Engineers
STRUCTURAL ENGINEER
140 Broadway
25th Floor
New York, NY 10005
United States
Tel: 212.532.2211

HDLIC
LIGHTING DESIGNER
10 East 38th Street
5th Floor
New York, NY 10016
United States
Tel: 212.529.7800

Cerami
ACOUSTICAL CONSULTANT
AUDIO VISUAL CONSULTANT
IT CONSULTANT
404 Fifth Avenue
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3/29/2017	PROGRESS DESIGN DEVELOPMENT
4/14/2017	ISSUE FOR ALI2 PERMIT
4/28/2017	ISSUE FOR BID, 30%
6/16/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
DRAWING TITLE

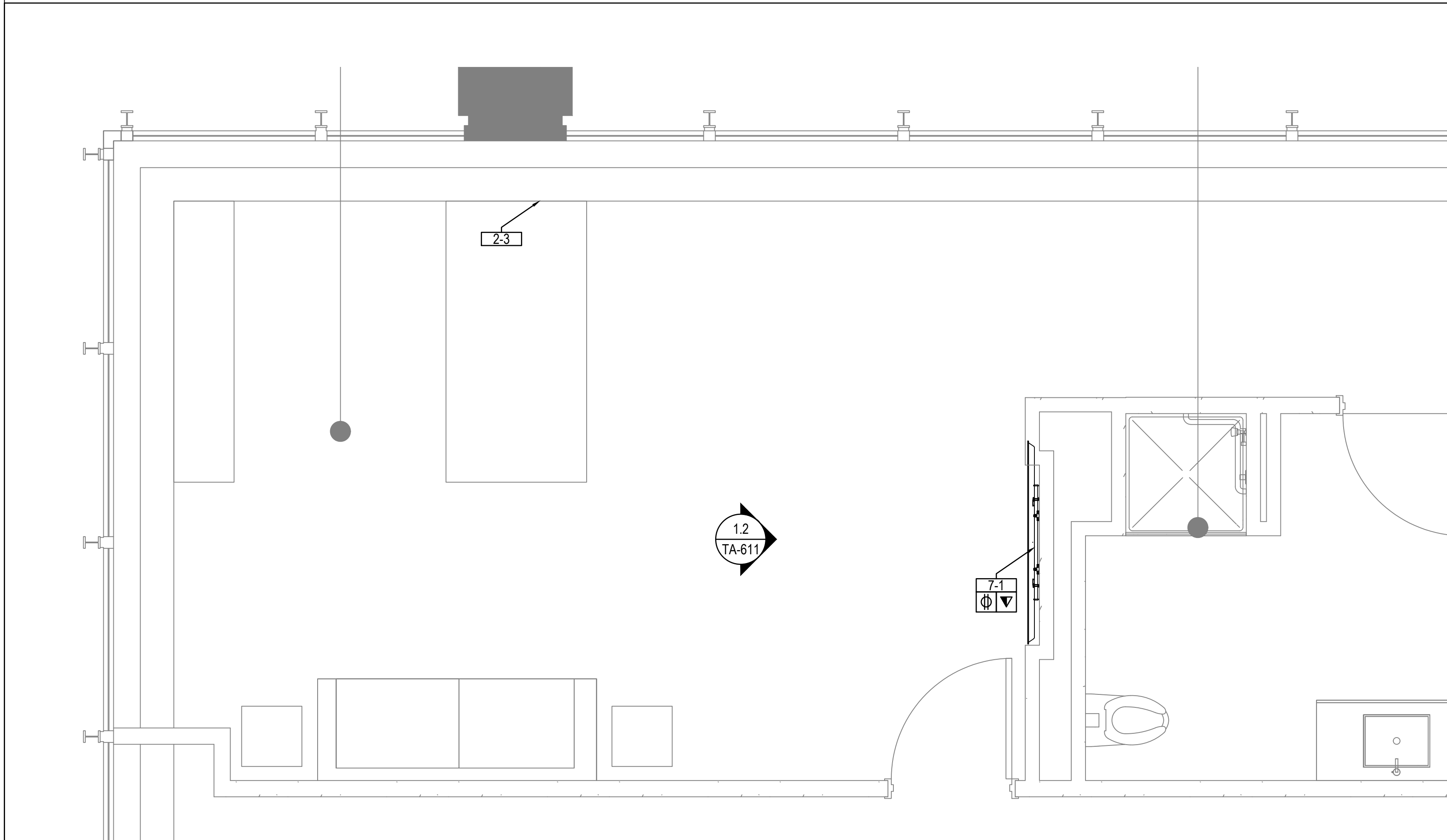
AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER

Scale
1/2" = 1'-0"

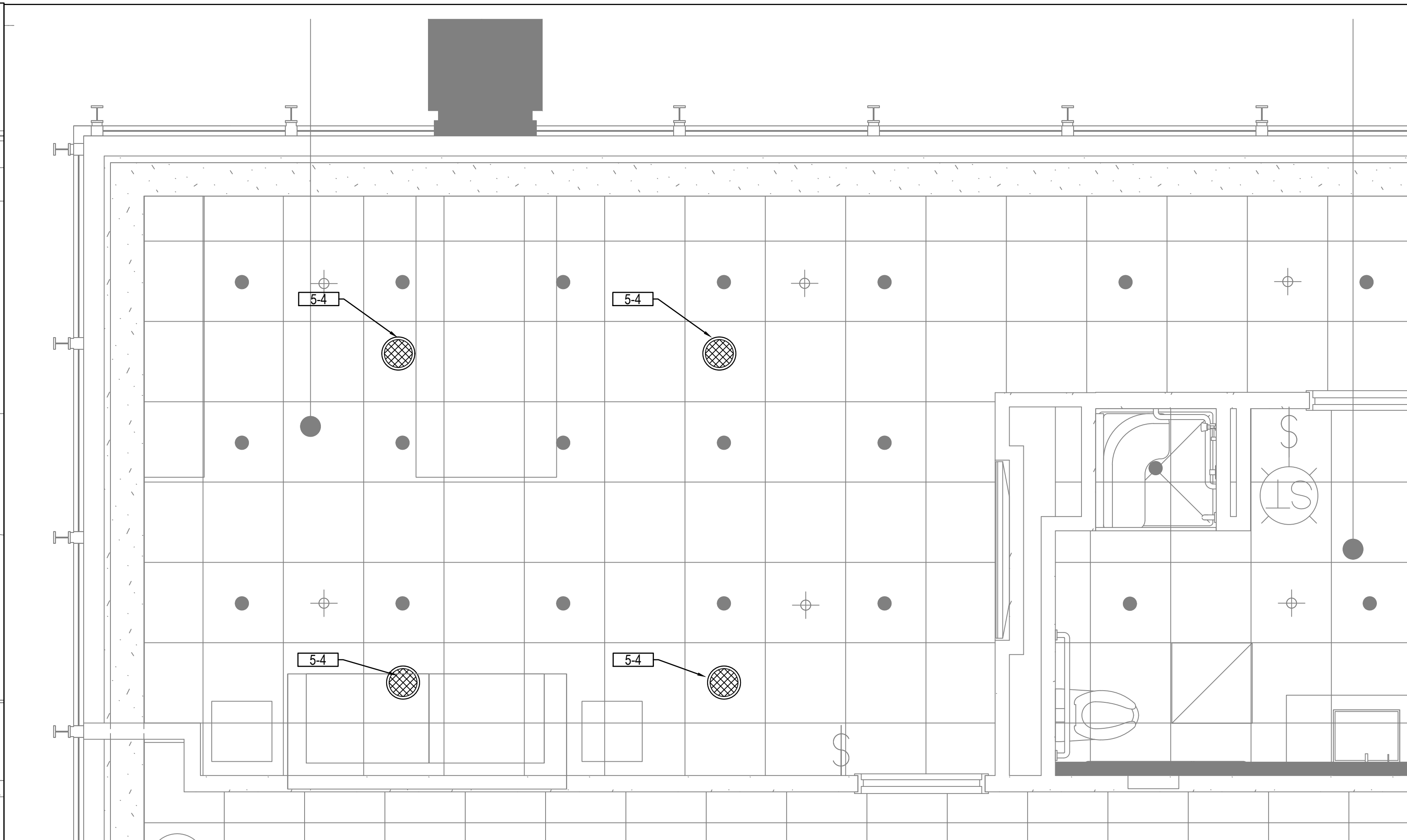
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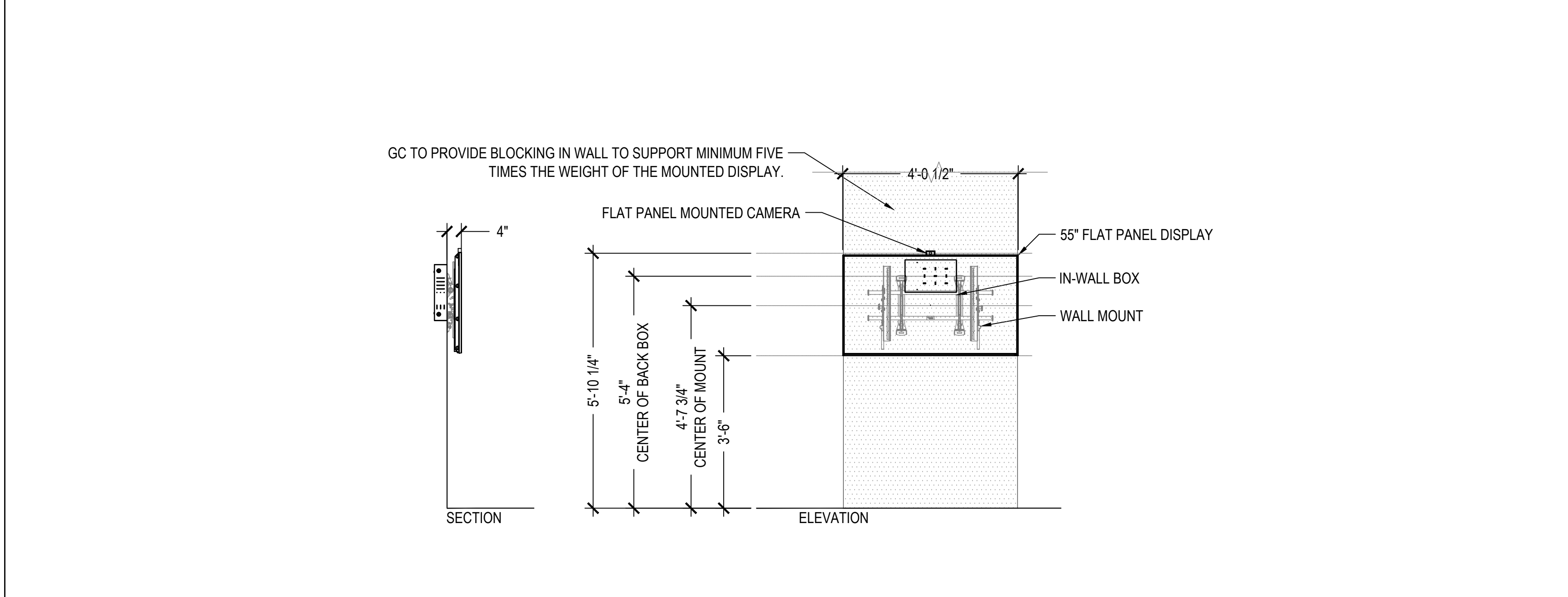
TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
EQUIPMENT RACKS	
1-#	1-1 FULL HEIGHT
	1-2 CREDENZA
	1-3 LECTERN
	1-4 PULL-OUT
CONNECTIVITY	
2-#	2-1 FLOOR BOX
	2-2 STUB-UP
	2-3 WALL PLATE
	2-4 TABLE HATCH
	2-5 CUSTOM WALL PLATE
	2-6 AV RACK PULL BOX
CONTROL/SCHEDULING	
3-#	3-1 ROOM SCHEDULING PANEL
	3-2 WALL MOUNTED BUTTONKEY PANEL
	3-3 WALL MOUNTED TOUCH PANEL
	3-4 WIRELESS TOUCH PANEL
	3-5 WIRED TOUCH PANEL
AUDIO INPUT	
4-#	4-1 TABLETOP AUDIO CONFERENCE UNIT
	4-2 TABLE MOUNTED MICROPHONE
	4-3 CEILING MOUNTED MICROPHONE
	4-4 WIRELESS MICROPHONE ANTENNA
AUDIO OUTPUT	
5-#	5-1 WALL MOUNTED LOUDSPEAKER
	5-2 ASSISTIVE LISTENING EMITTER
	5-3 CEILING MOUNTED LOUDSPEAKER
	5-4 CEILING RECESSED LOUDSPEAKER
VIDEO ORIGIN/SOURCE	
6-#	6-1 WALL MOUNTED CAMERA / WITH 2-GANG BOX
	6-2 CEILING MOUNTED CAMERA
	6-3 OBSERVATION CAMERA
VIDEO DISPLAY (TYPE 1)	
7-#	7-1 (65") WALL MOUNTED FLAT PANEL
	7-2 (65") WALL MOUNTED FLAT PANEL
	7-3 (75") WALL MOUNTED FLAT PANEL
	7-4 (90") WALL MOUNTED FLAT PANEL
	7-5 (42") WALL MOUNTED FLAT PANEL
	7-6 SINGLE CISCO MX800 (OSE) VIDEO CONFERENCE UNIT
	7-7 DUAL CISCO MX800 (OSE) VIDEO CONFERENCE UNIT
	7-8 VIDEO WALL (2X2) 4-55" DISPLAYS
	7-9 (55") CEILING MOUNTED FLAT PANEL
VIDEO DISPLAY (TYPE 2)	
8-#	8-1 VIDEO PROJECTOR, POLE MOUNTED
	8-2 VIDEO PROJECTOR, ON MOTORIZED LIFT
VIDEO DISPLAY (TYPE 3)	
9-#	9-1C (122") CEILING RECESSED FRONT PROJECTION SCREEN
	9-1W (#") WALL MOUNTED FRONT PROJECTION SCREEN
	9-2 (#") CEILING RECESSED FRONT PROJECTION SCREEN - BOX ONLY
MISCELLANEOUS	
10-#	10-1 BLACKOUT SHADES, MANUAL
	10-2 BLACKOUT SHADES, MOTORIZED
	10-3 PC (OFF)
	10-4 LAPTOP (OFF)



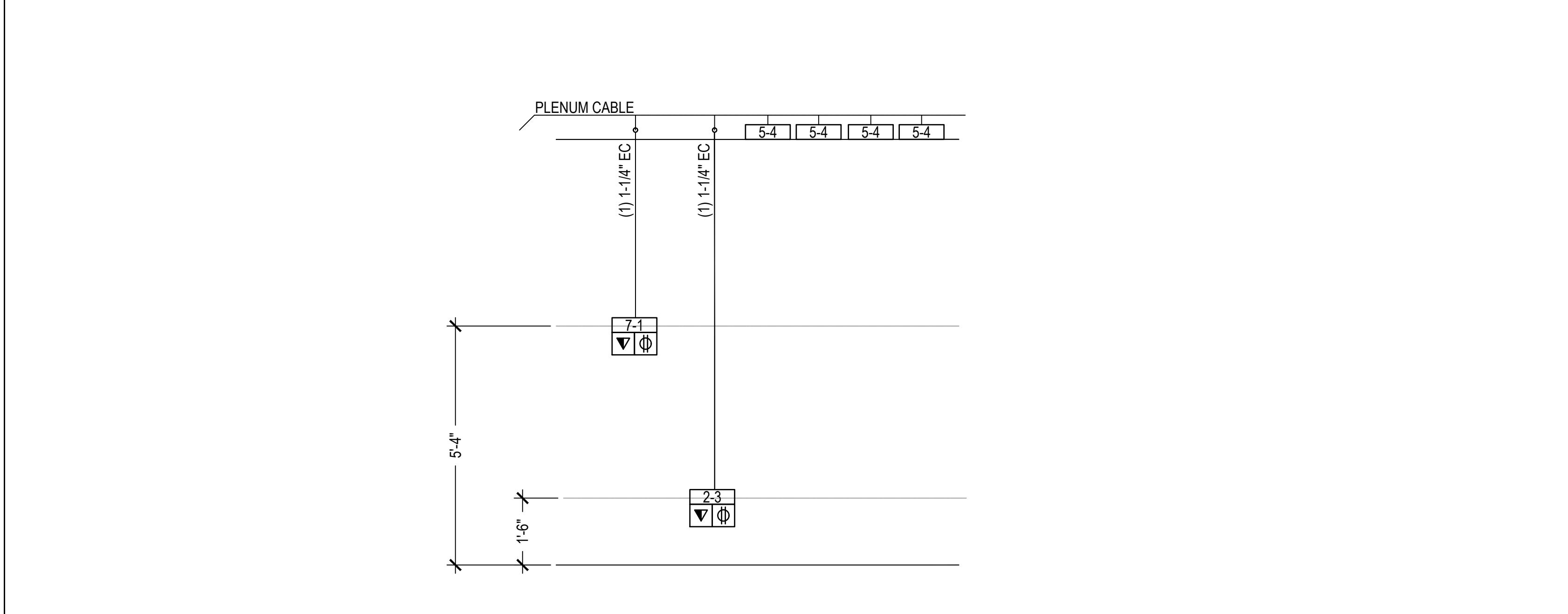
1.0 ENLARGED FACILITY PLAN
 EXECUTIVE OFFICE 23B01
 1/2"=1'-0"



1.1 ENLARGED REFLECTED CEILING PLAN
 EXECUTIVE OFFICE 23B01
 1/2"=1'-0"



1.2 ELEVATION
 EXECUTIVE OFFICE 23B01
 1/2"=1'-0"

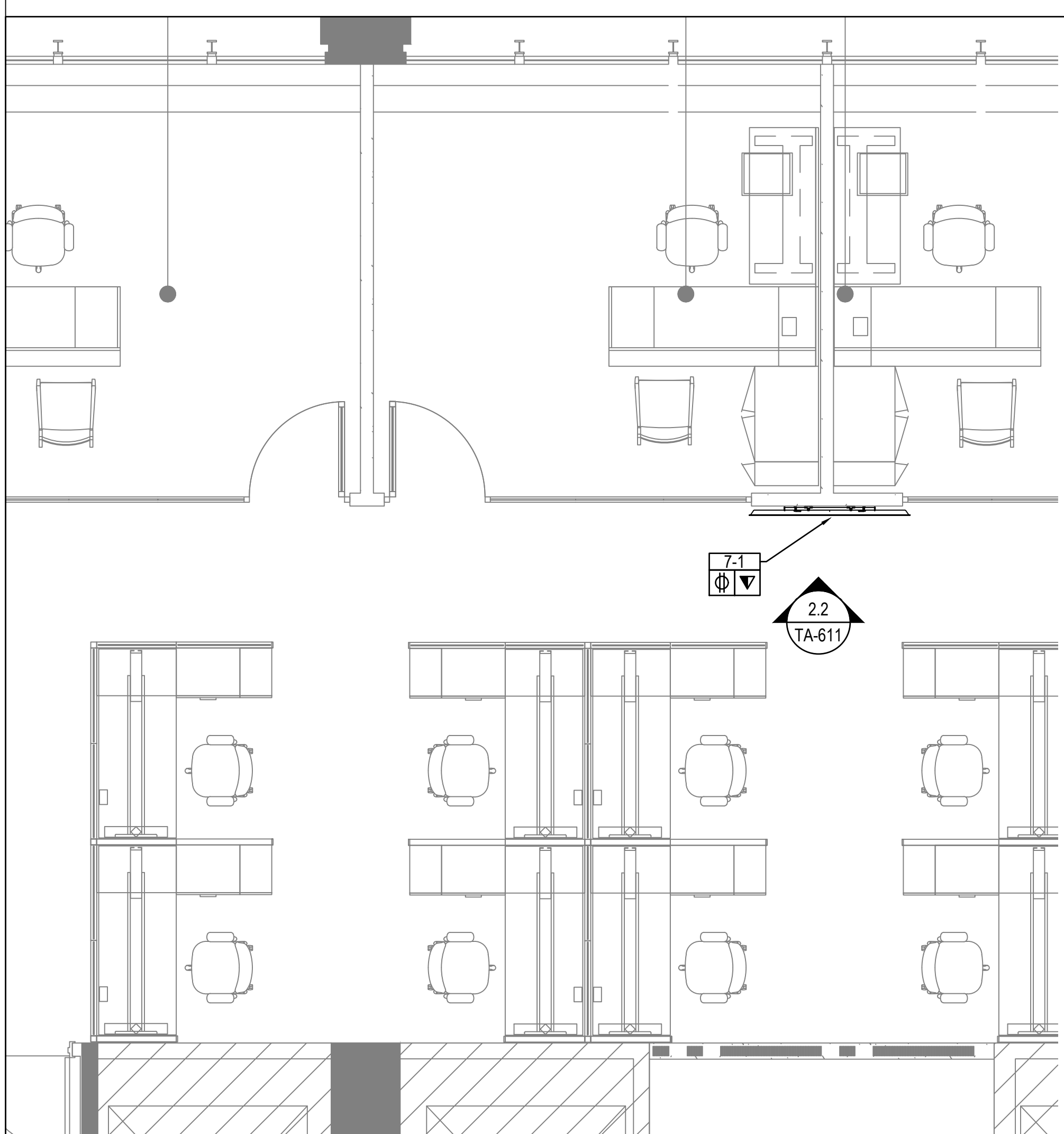


1.3 CONDUIT RISER DIAGRAM
 EXECUTIVE OFFICE 23B01
 1/2"=1'-0"

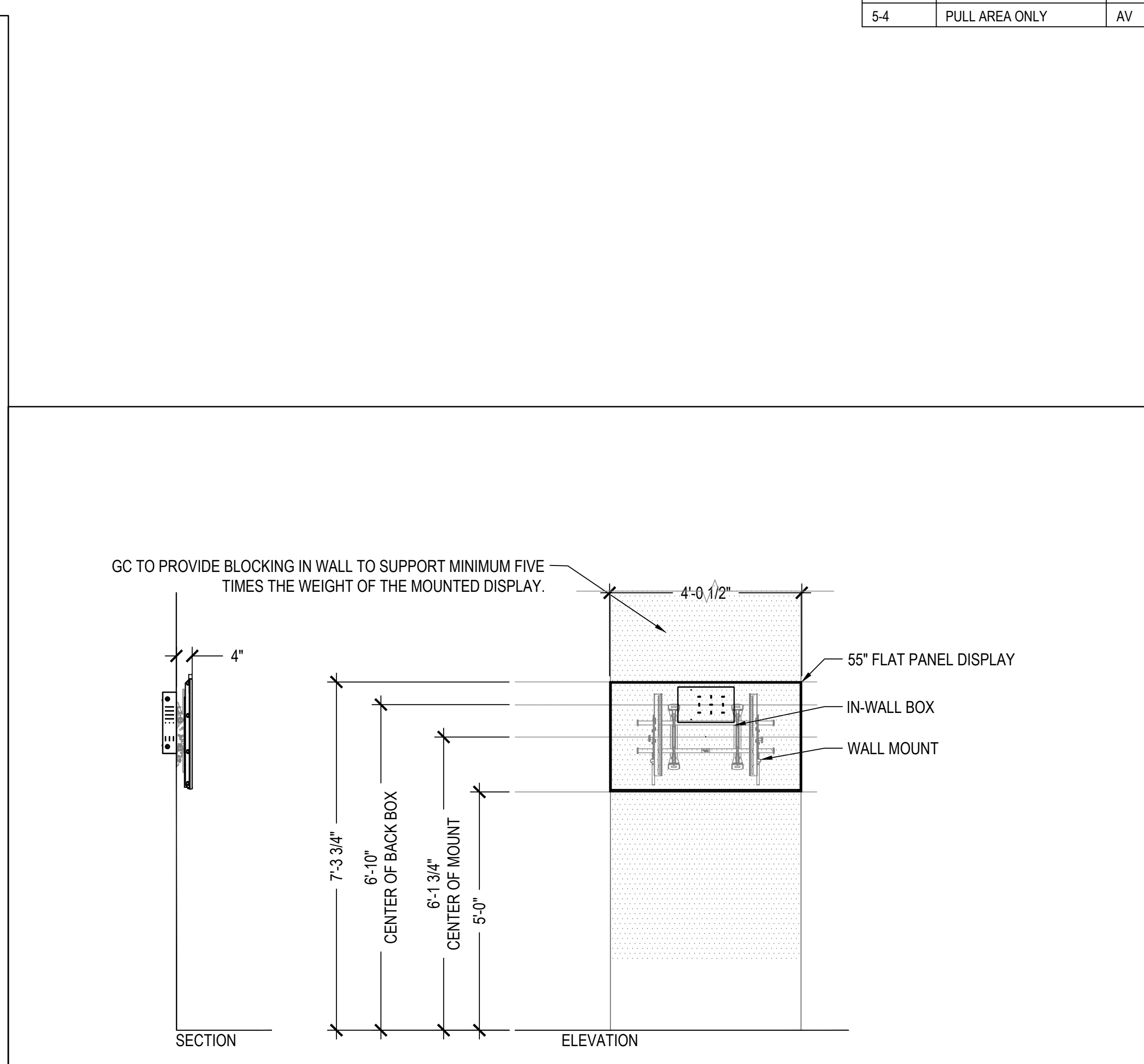
JUNCTION BOX SCHEDULE				
BOX	SIZE/MODEL	PROVIDED BY	FUNCTION	NOTES
2-3	2 GANG	EC	AV DEVICE CONNECTIONS	FINISH PLATE WHERE VISIBLE
7-1	CHIEF PAC526	EC	DISPLAY CONNECTIONS	POWER AND DATA MOUNTED PER MANUFACTURER SPECIFICATIONS
5-4	PULL AREA ONLY	AV	CEILING SPEAKER	MOUNTING RING AND/OR TILE BRIDGE

GENERAL NOTES:

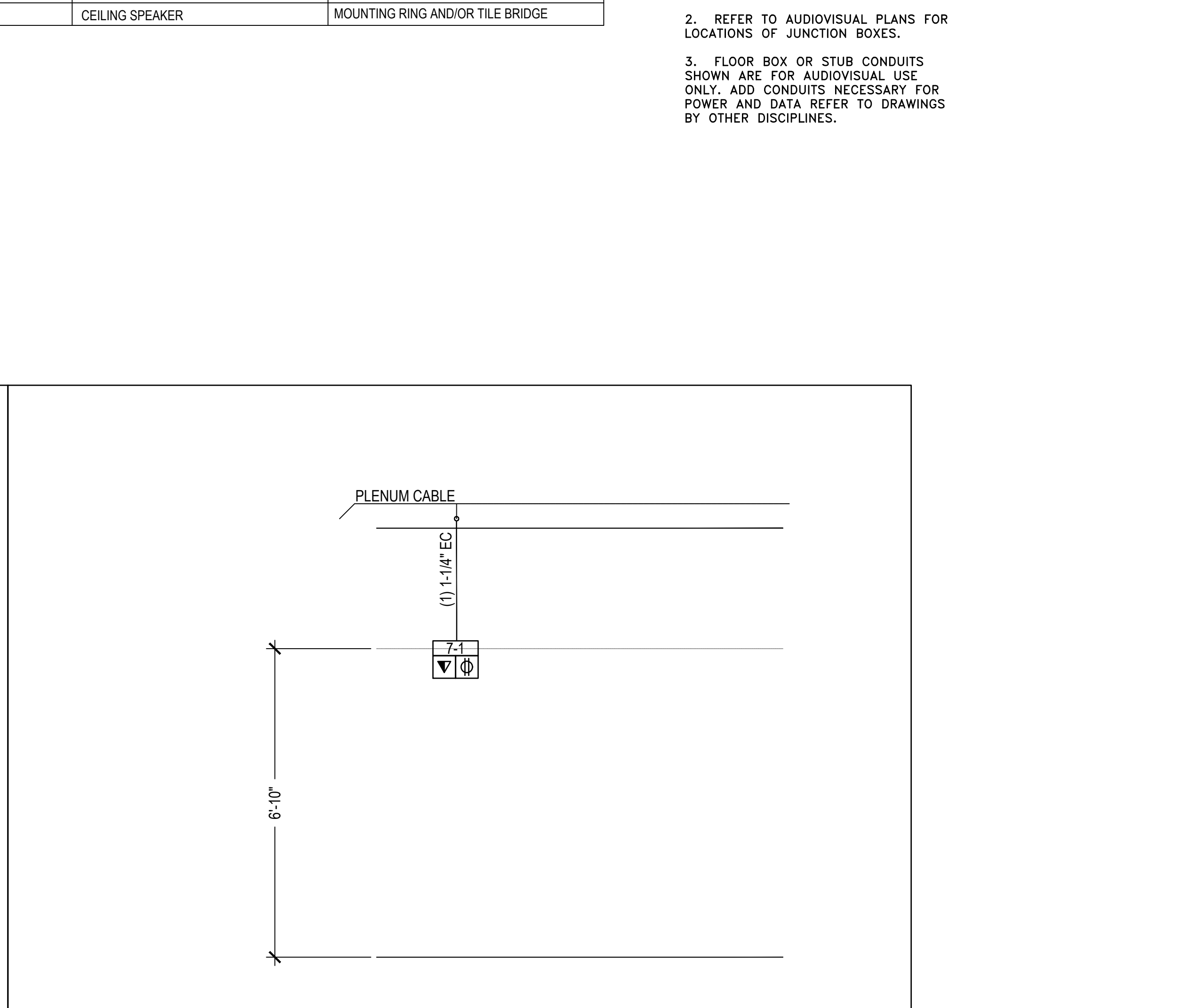
- THIS DRAWING INDICATES CONNECTIVITY OF CONDUIT, JUNCTION BOXES, AND POINTS OF AUDIOVISUAL SYSTEMS CONNECTIVITY ONLY. ACTUAL PATHS OF CONDUITS TO BE DETERMINED BY ELECTRICAL CONTRACTOR.
- REFER TO AUDIOVISUAL PLANS FOR LOCATIONS OF JUNCTION BOXES.
- FLOOR BOX OR STUB CONDUITS SHOWN ARE FOR AUDIOVISUAL USE ONLY. ADD CONDUITS NECESSARY FOR POWER AND DATA REFER TO DRAWINGS BY OTHER DISCIPLINES.



2.0 ENLARGED FACILITY PLAN
 OPEN AREA DISPLAY
 1/2"=1'-0"



2.2 ELEVATION
 OPEN AREA DISPLAY
 1/2"=1'-0"



2.3 CONDUIT RISER DIAGRAM
 OPEN AREA DISPLAY
 1/2"=1'-0"

Date	Description
1/3/2017	PROGRESS DESIGN DEVELOPMENT
2/4/2017	ISSUE FOR ALTY PERMIT
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Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
AUDIOVISUAL ENLARGED PLAN, ELEVATION & RISER

Scale
 1/2" = 1'-0"

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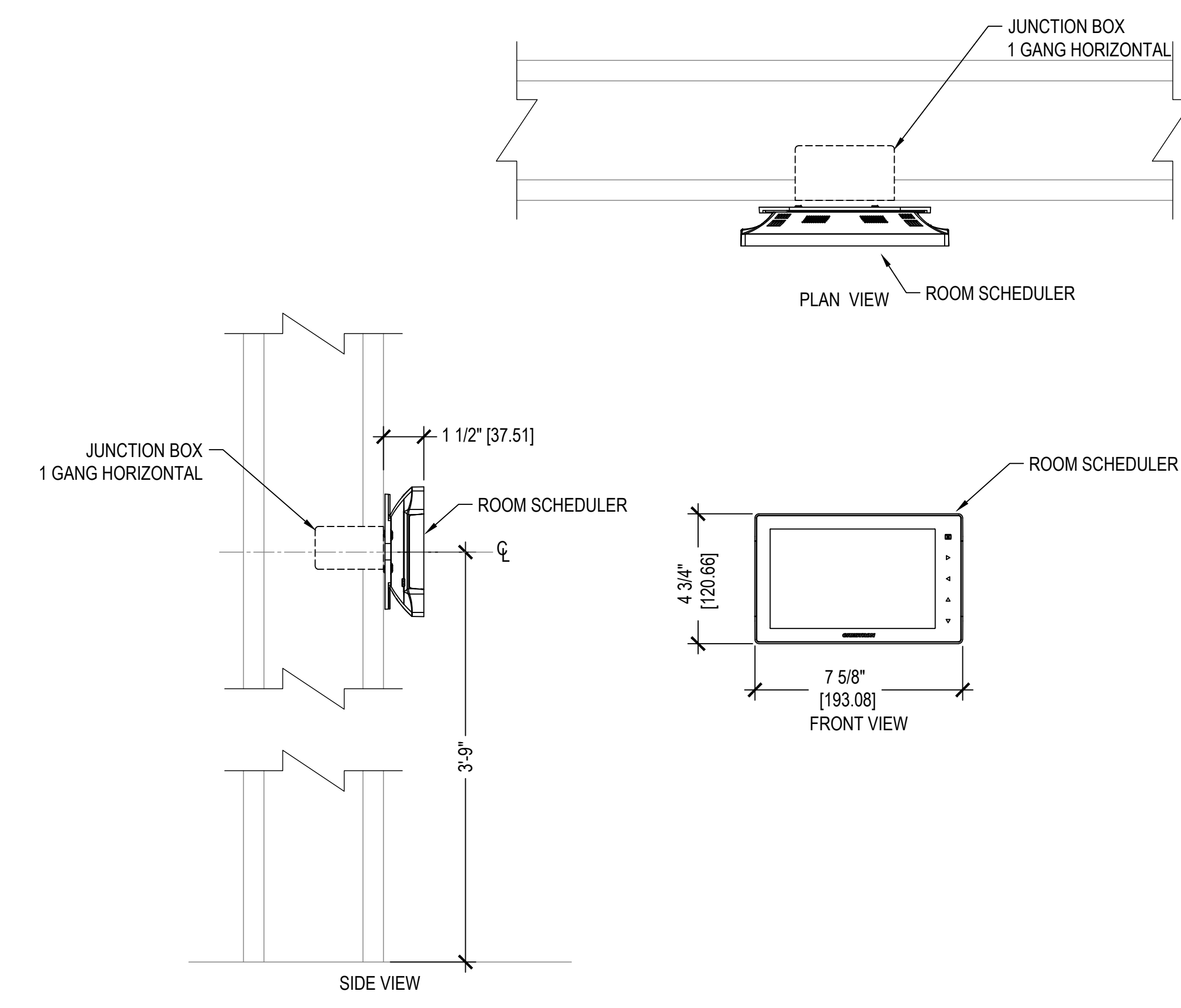
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 AUDIOVISUAL DETAIL
 DRAWINGS

Scale
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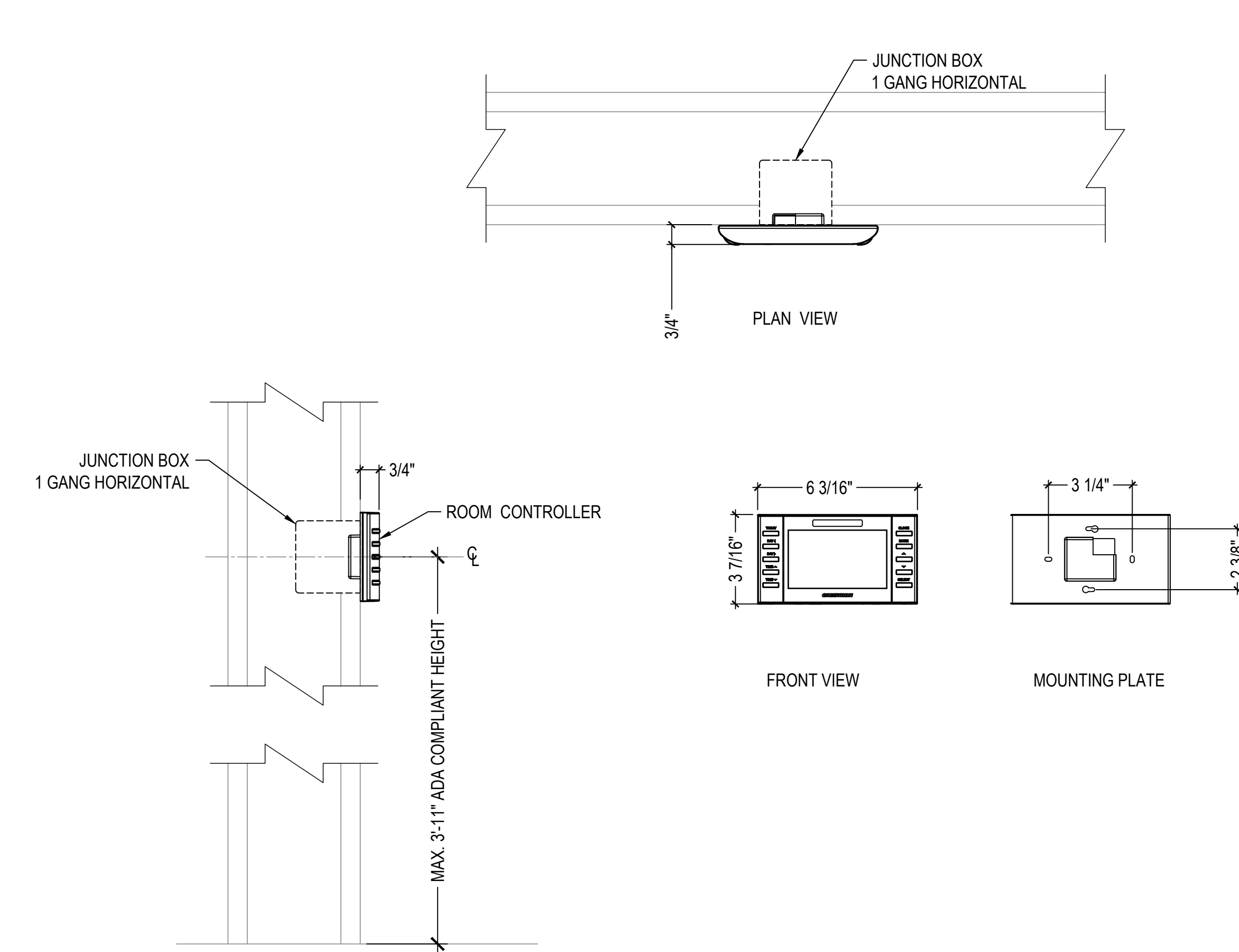
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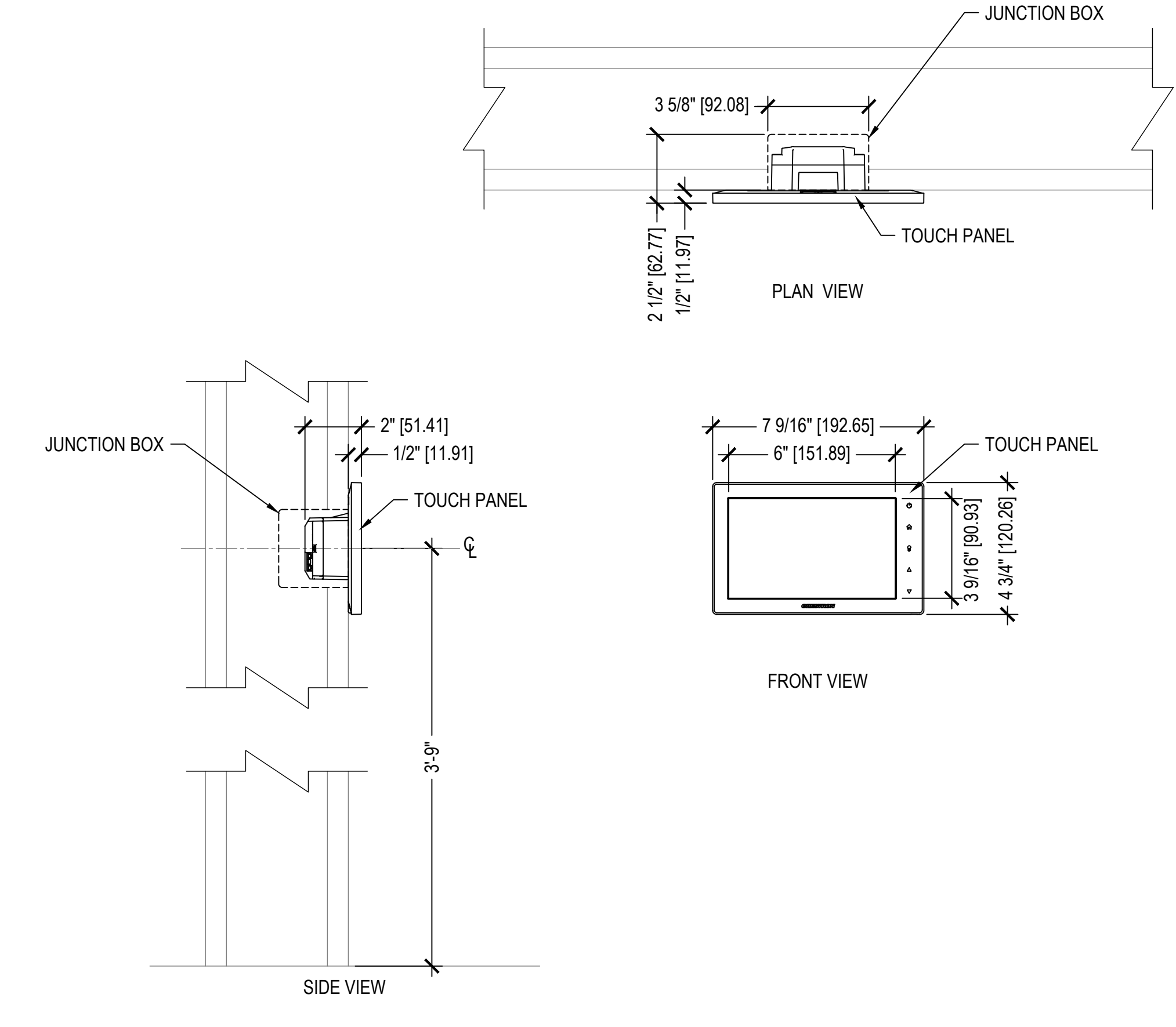
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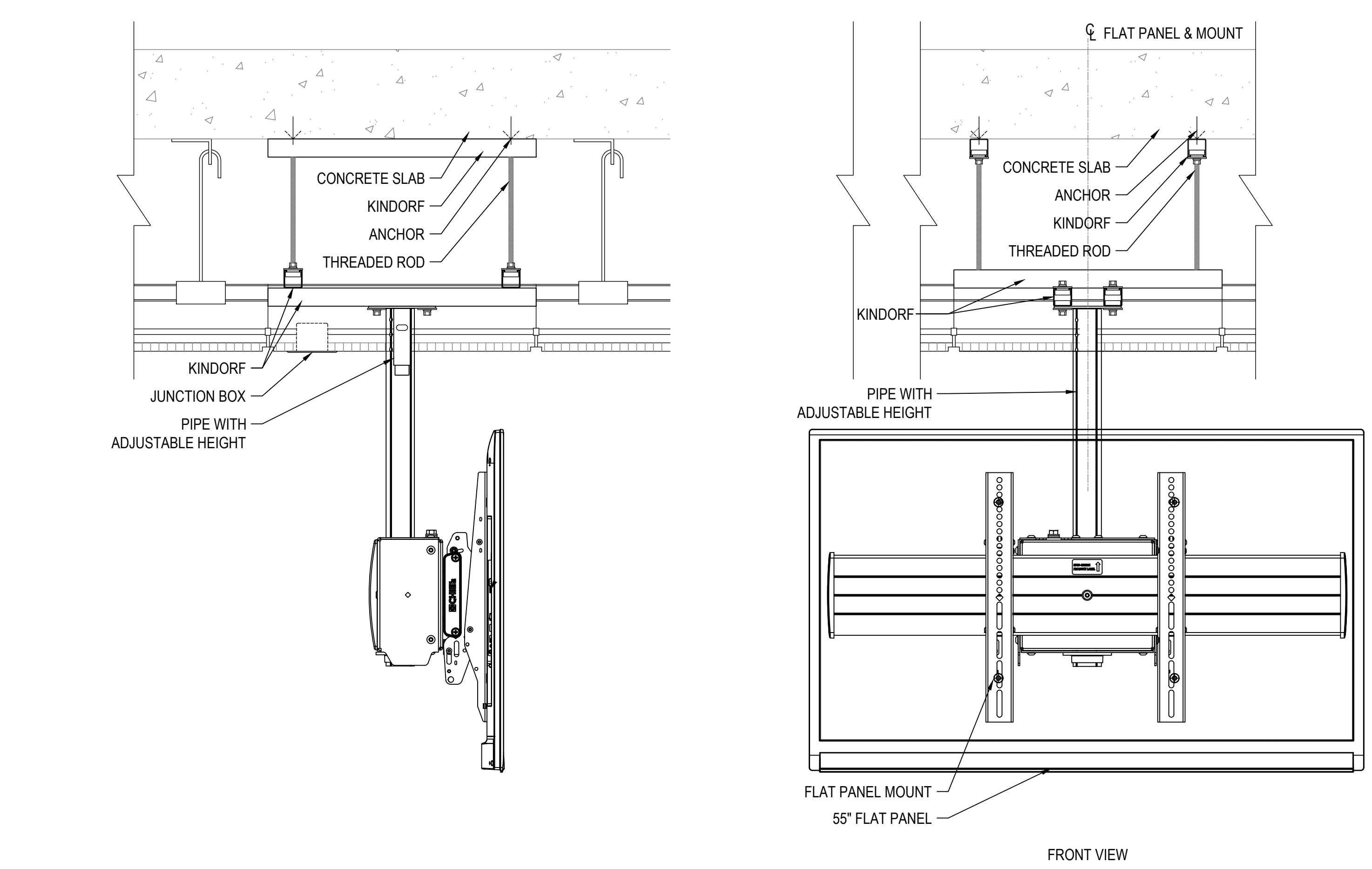
1.0 AUDIOVISUAL DETAIL DRAWING ROOM SCHEDULER
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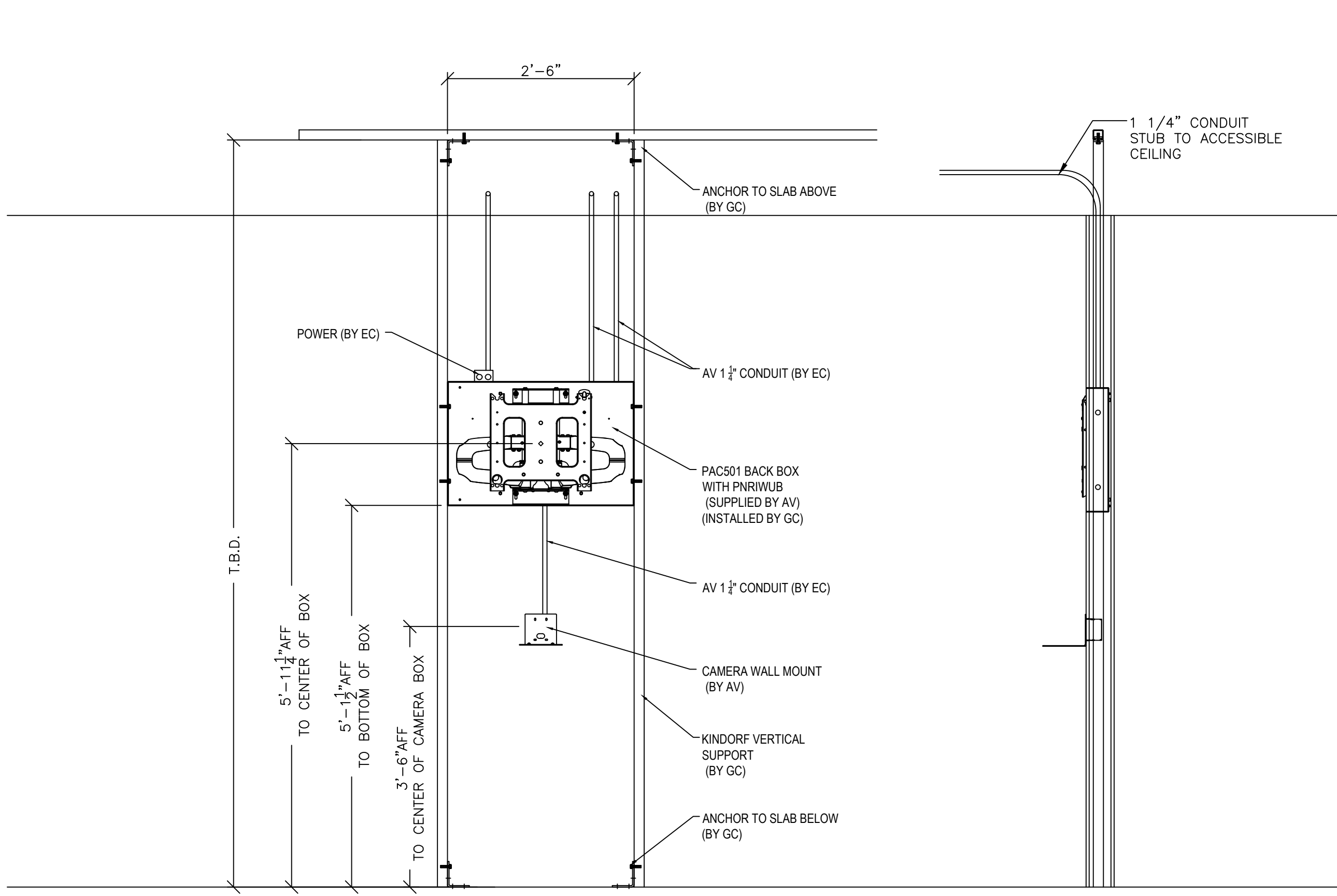
2.0 AUDIOVISUAL DETAIL DRAWING SMALL WALL MOUNTED TOUCH PANEL
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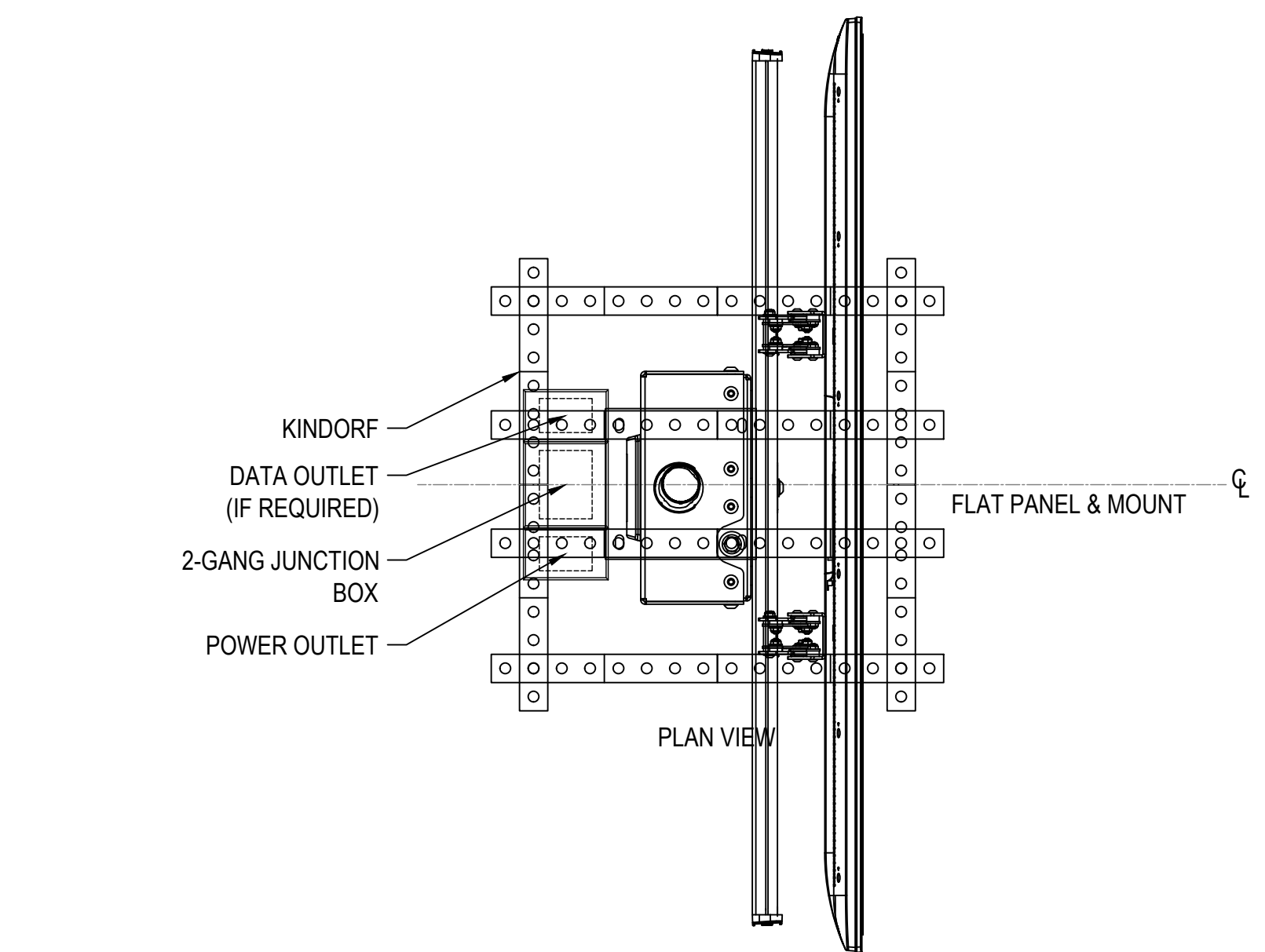
3.0 AUDIOVISUAL DETAIL DRAWING LARGE WALL MOUNTED TOUCH PANEL
 NTS



**4.0 AUDIOVISUAL DETAIL DRAWING 55\"/>
 NTS**



**5.0 AUDIOVISUAL DETAIL DRAWING 90\"/>
 NTS**



**6.0 AUDIOVISUAL DETAIL DRAWING 90\"/>
 NTS**

**4.0 AUDIOVISUAL DETAIL DRAWING 55\"/>
 NTS**

APPENDIX 6
AV SYSTEM DIAGRAMS

**FOSUN /
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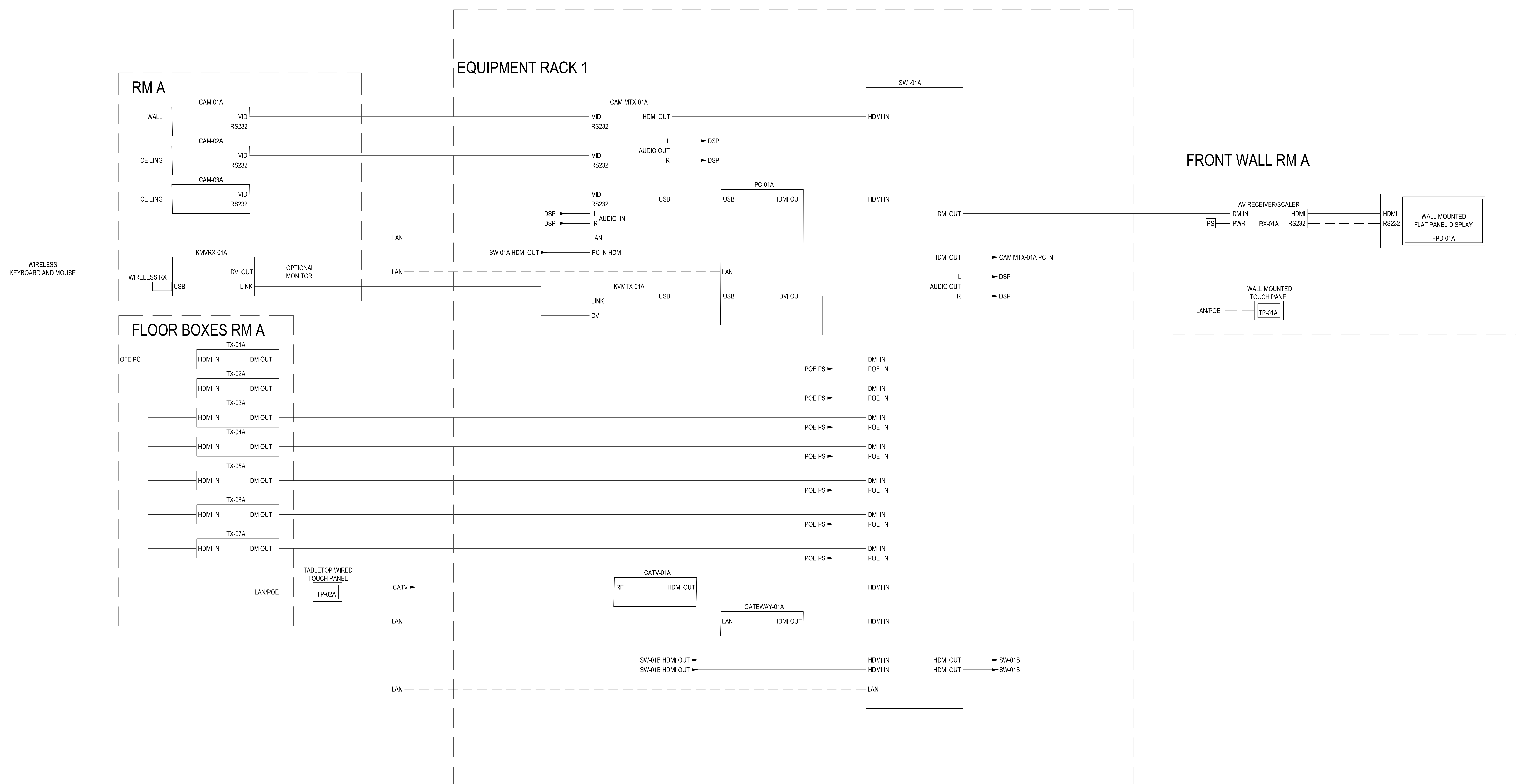
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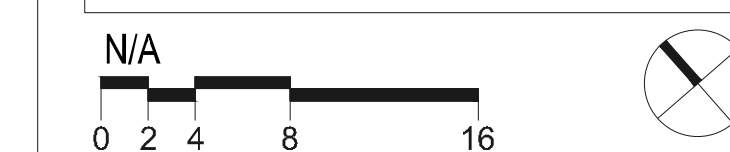
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Description

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AUDIOVISUAL SYSTEMS DIAGRAM
ROOM MPR16P02

Scale



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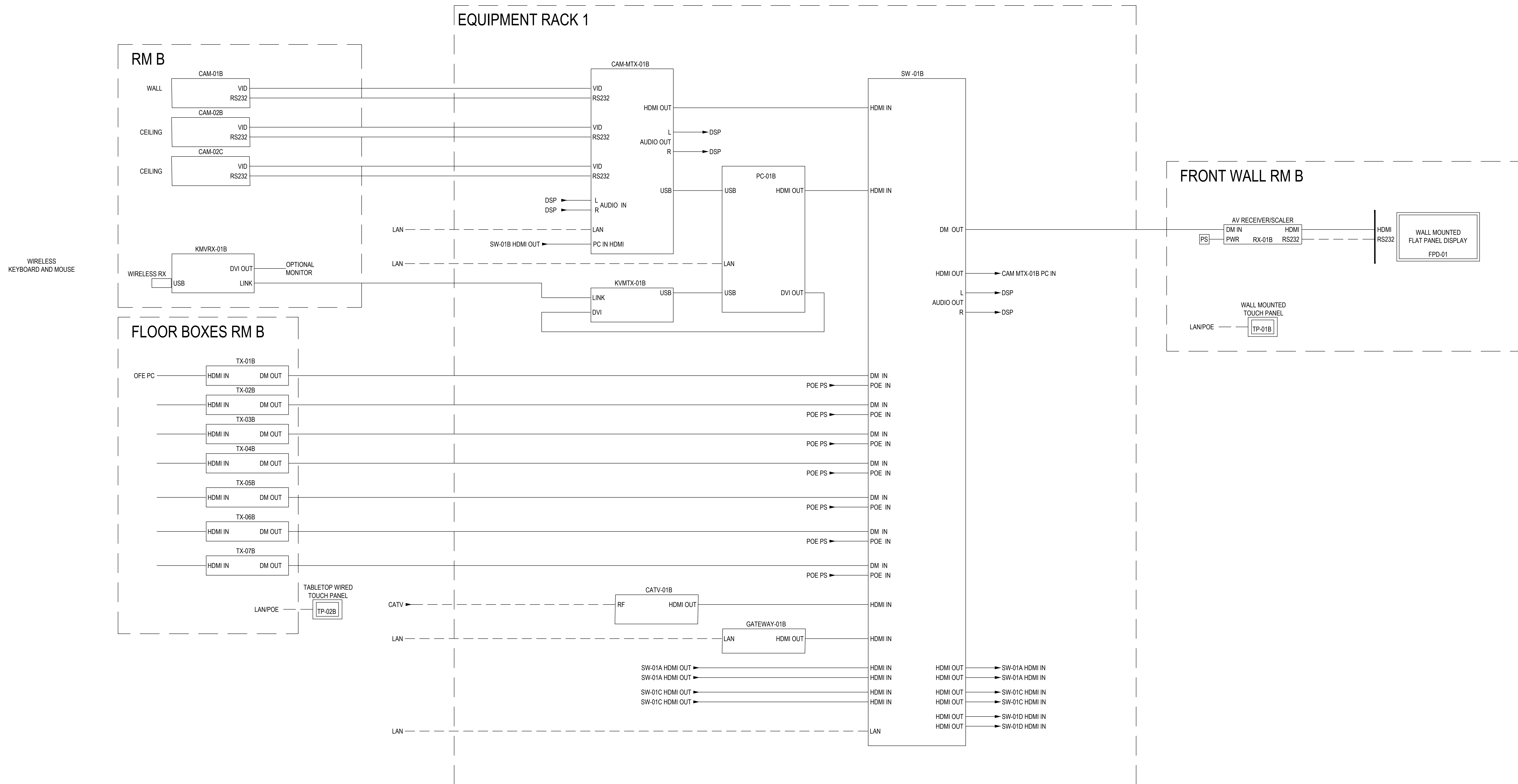
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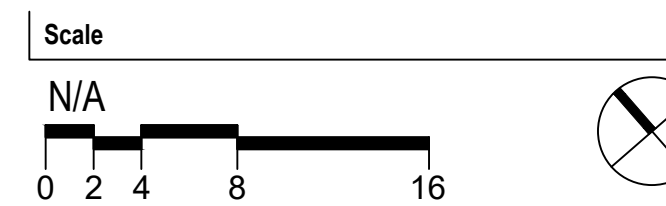
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Project Number
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Description
 DRAWING TITLE
 AUDIOVISUAL SYSTEMS DIAGRAM
 ROOM MPR16P06



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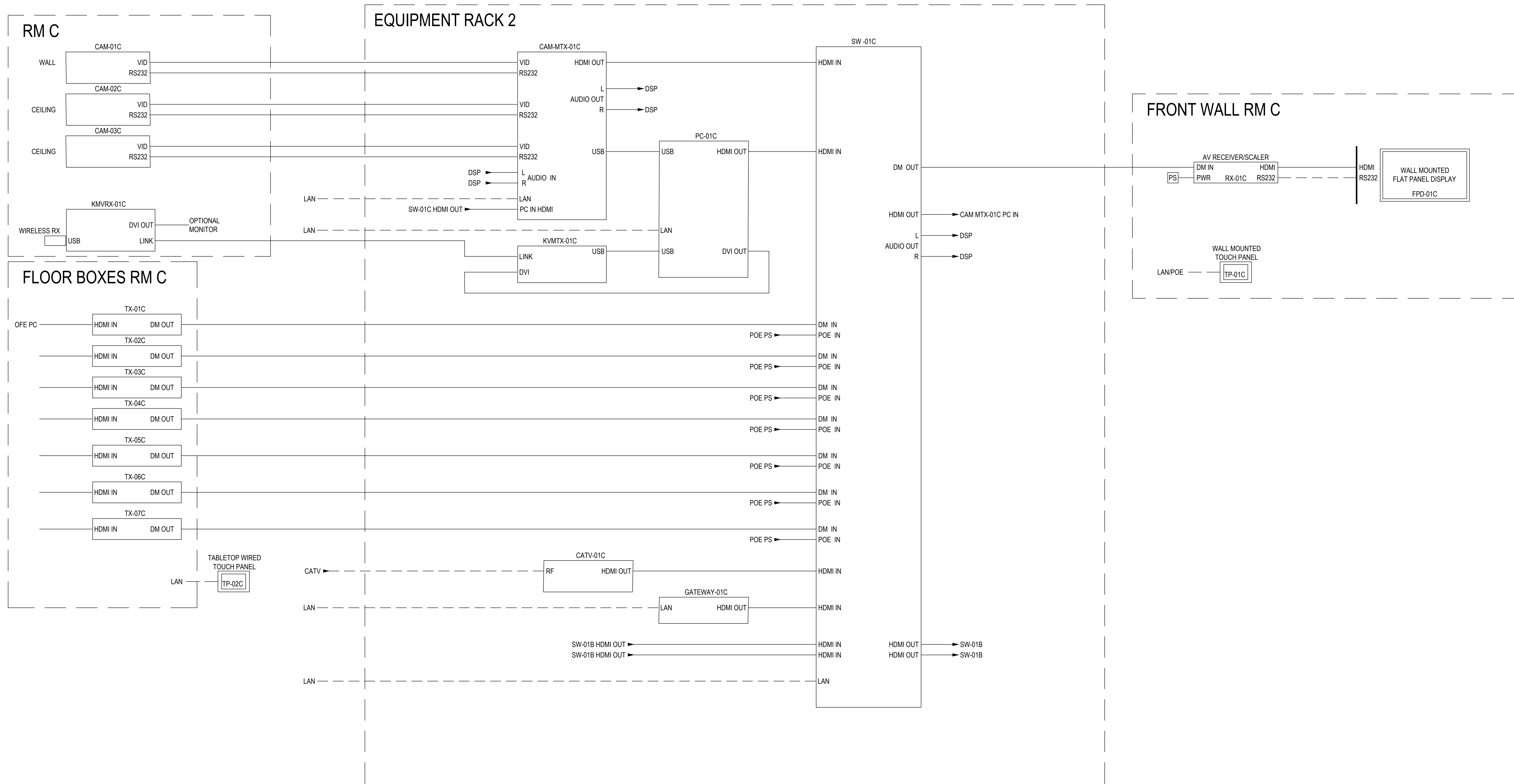
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 AUDIOVISUAL SYSTEMS DIAGRAM
 ROOM MPR16P09

Scale
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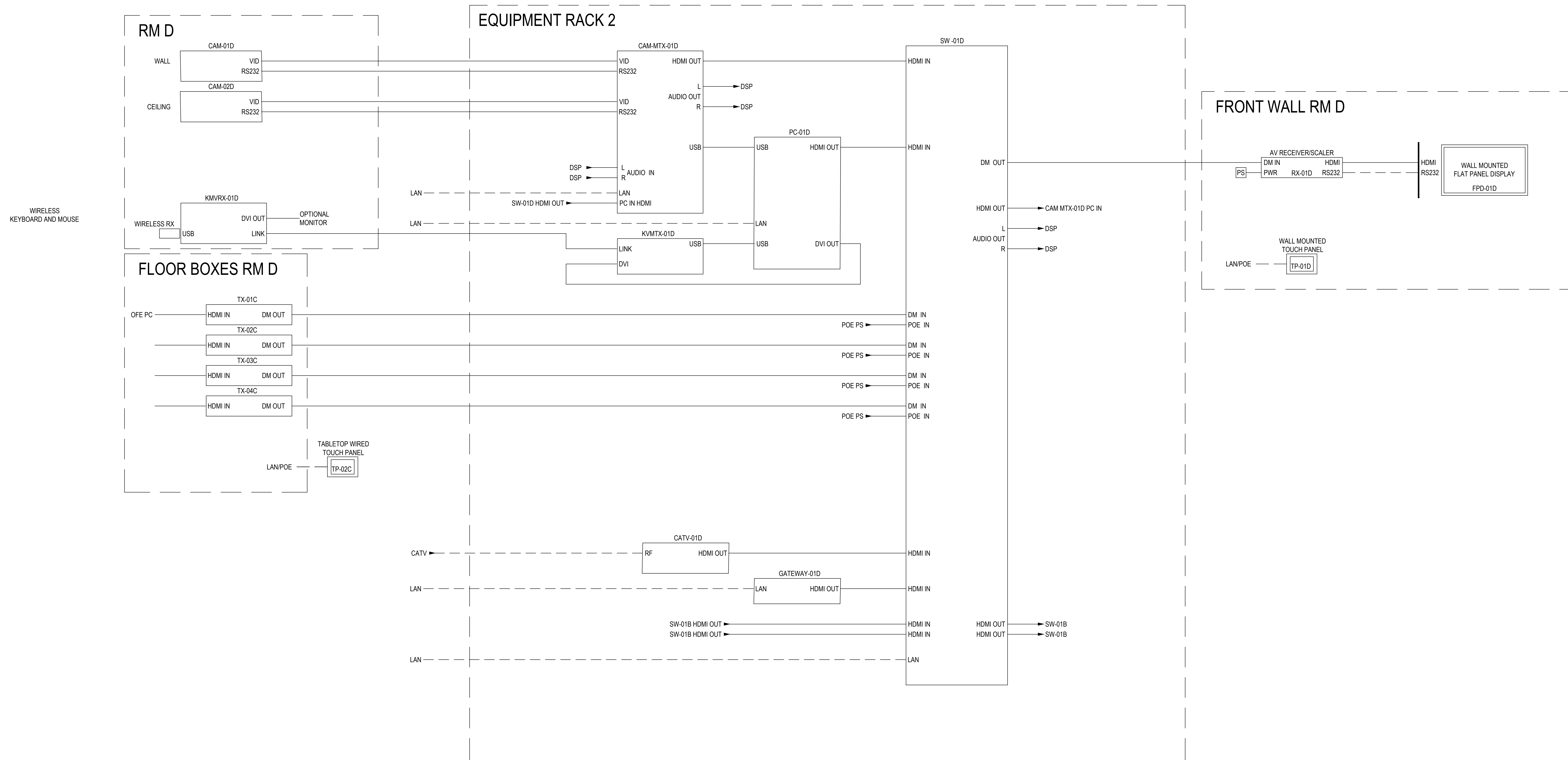
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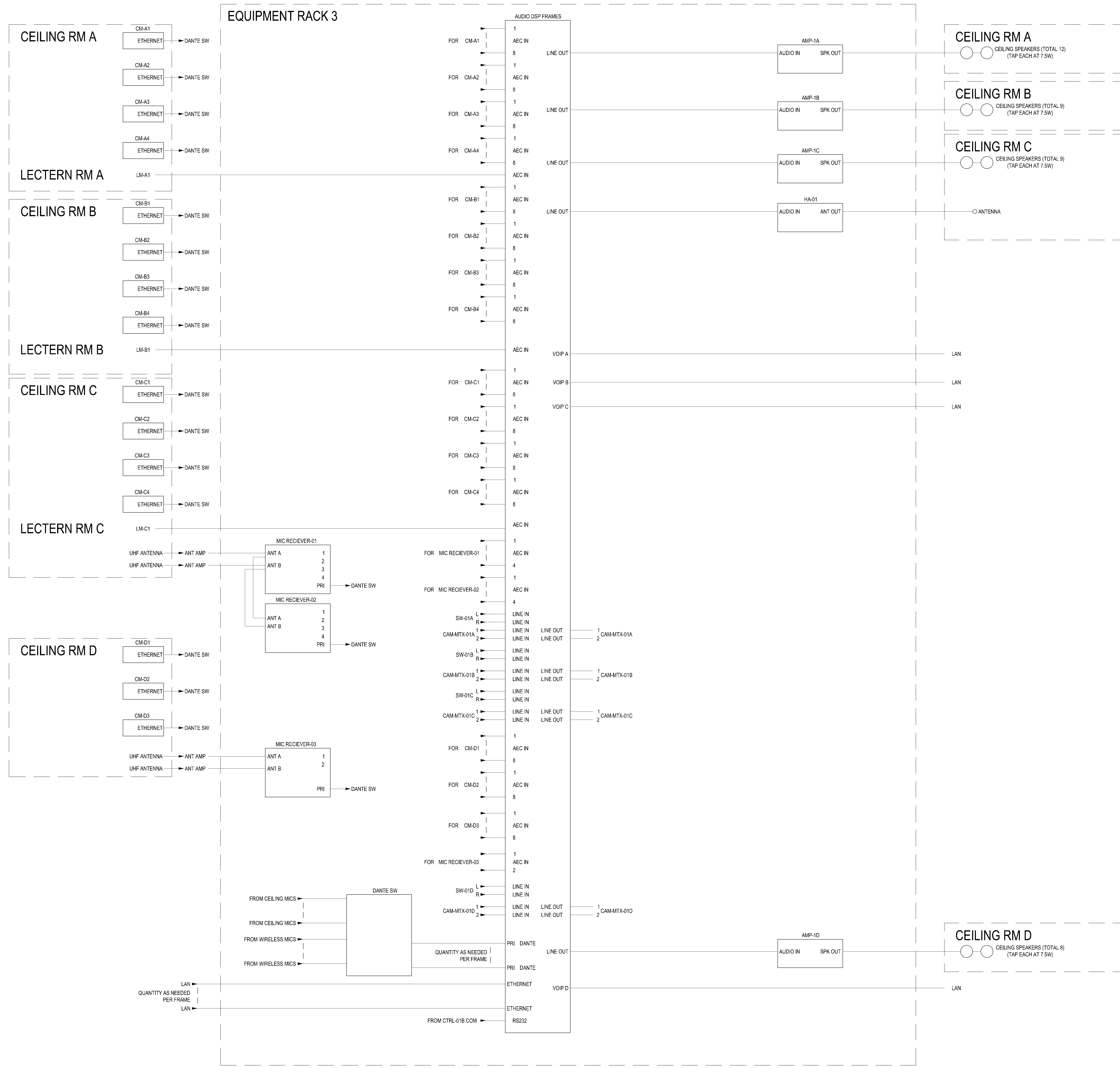
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Project Number
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Description
 DRAWING TITLE
 AUDIOVISUAL SYSTEMS DIAGRAM
 COMPUTER TRAINING ROOM
 MPR16P13

Scale
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Project Number
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Description
**DRAWING TITLE
AUDIO SYSTEMS DIAGRAM
MPR & COMPUTER TRAINING ROOM
16P02, 16P06, 16P09, 16P13**

Scale
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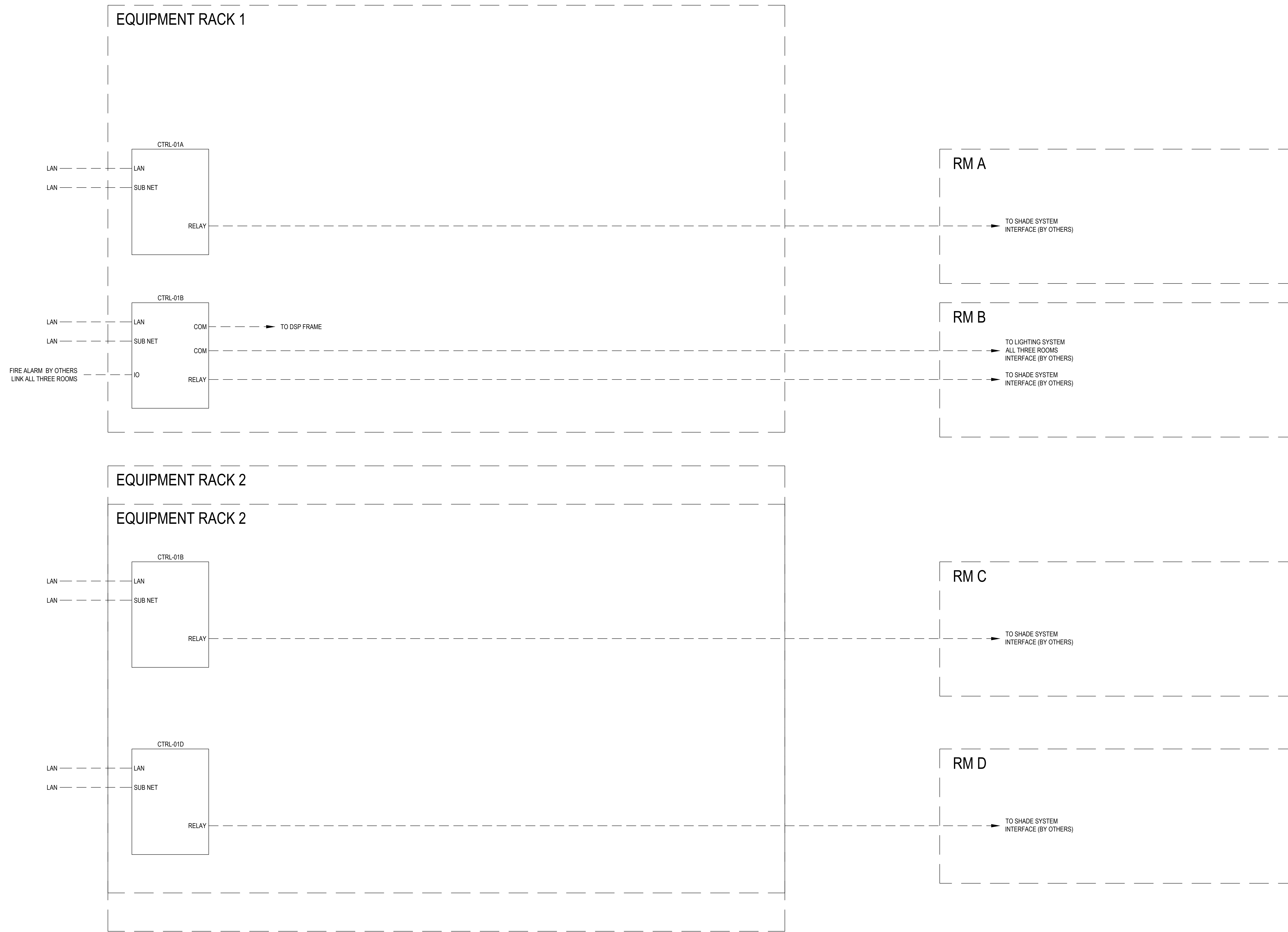
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Project Name
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Project Number
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Description
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 CONTROL SYSTEMS DIAGRAM
 MPR & COMPUTER TRAINING ROOM
 16P02, 16P06, 16P09, 16P13

Scale
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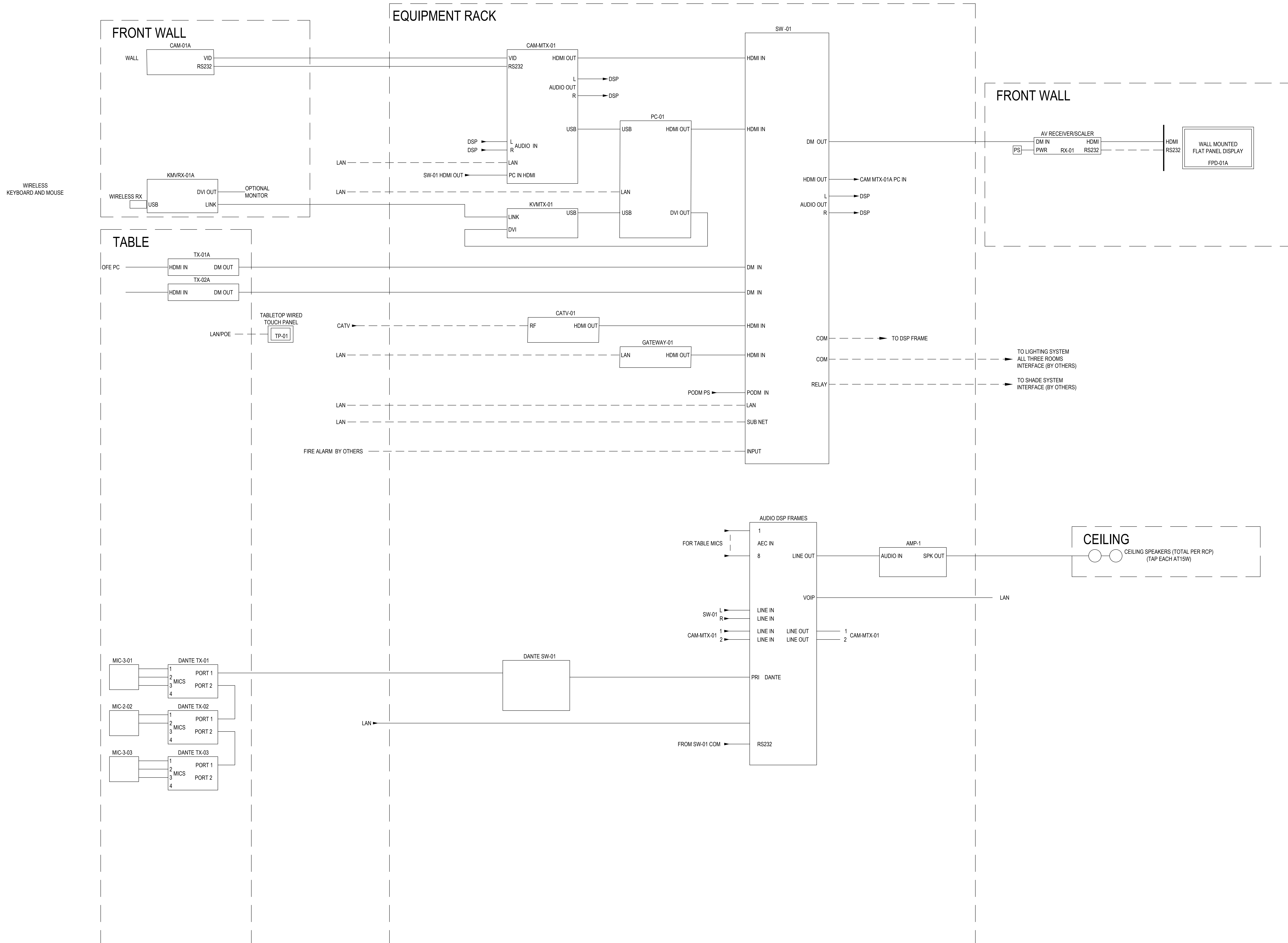
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ROOM ASSIGNMENT
 13M34, 14M24, 15M24,
 17M18, 18M18, 19M18,
 20M18, 21M18, 23M21,
 16P28, 16P21, 16P16

Date	Description
6/14/2017	ISSUE FOR CONSTRUCTION, 100%

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Project Name
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Project Number
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 AV SYSTEMS DIAGRAM
 LARGE CONFERENCE ROOMS
 SEE LEGEND FOR RM ASSIGNMENT

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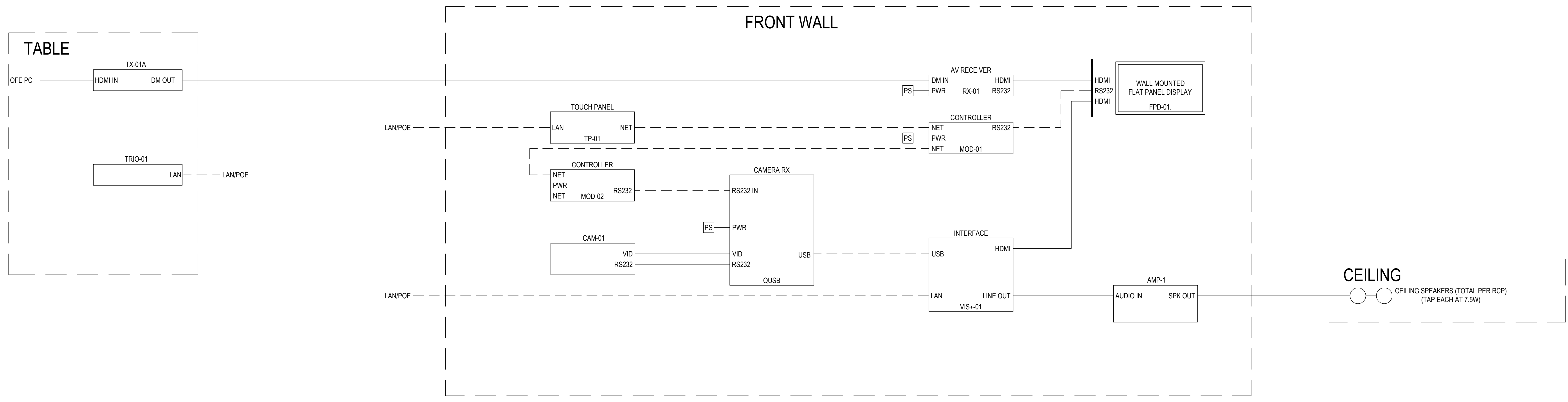
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15A25, 16M23, 16M25,
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20A17, 21A17, 23A05

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AV SYSTEMS DIAGRAM
MEDIUM CONFERENCE ROOMS
SEE LEGEND FOR RM ASSIGNMENT

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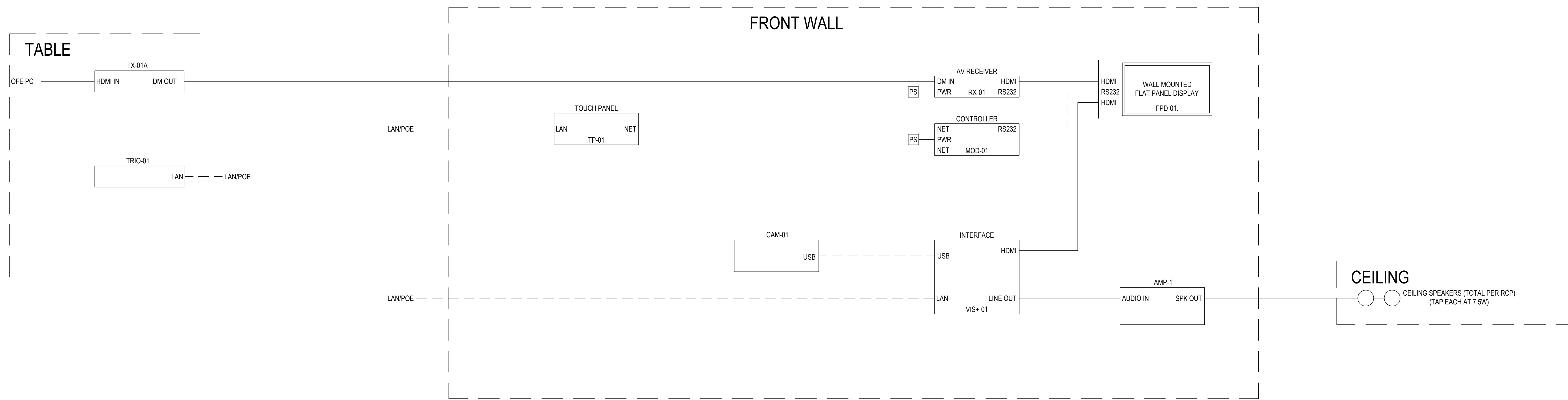
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Date	Description
6/14/2017	ISSUE FOR CONSTRUCTION, 100%

ROOM ASSIGNMENT
 16M12, 16M14

Seal / Signature

Project Name
 OGS / NYS OAG

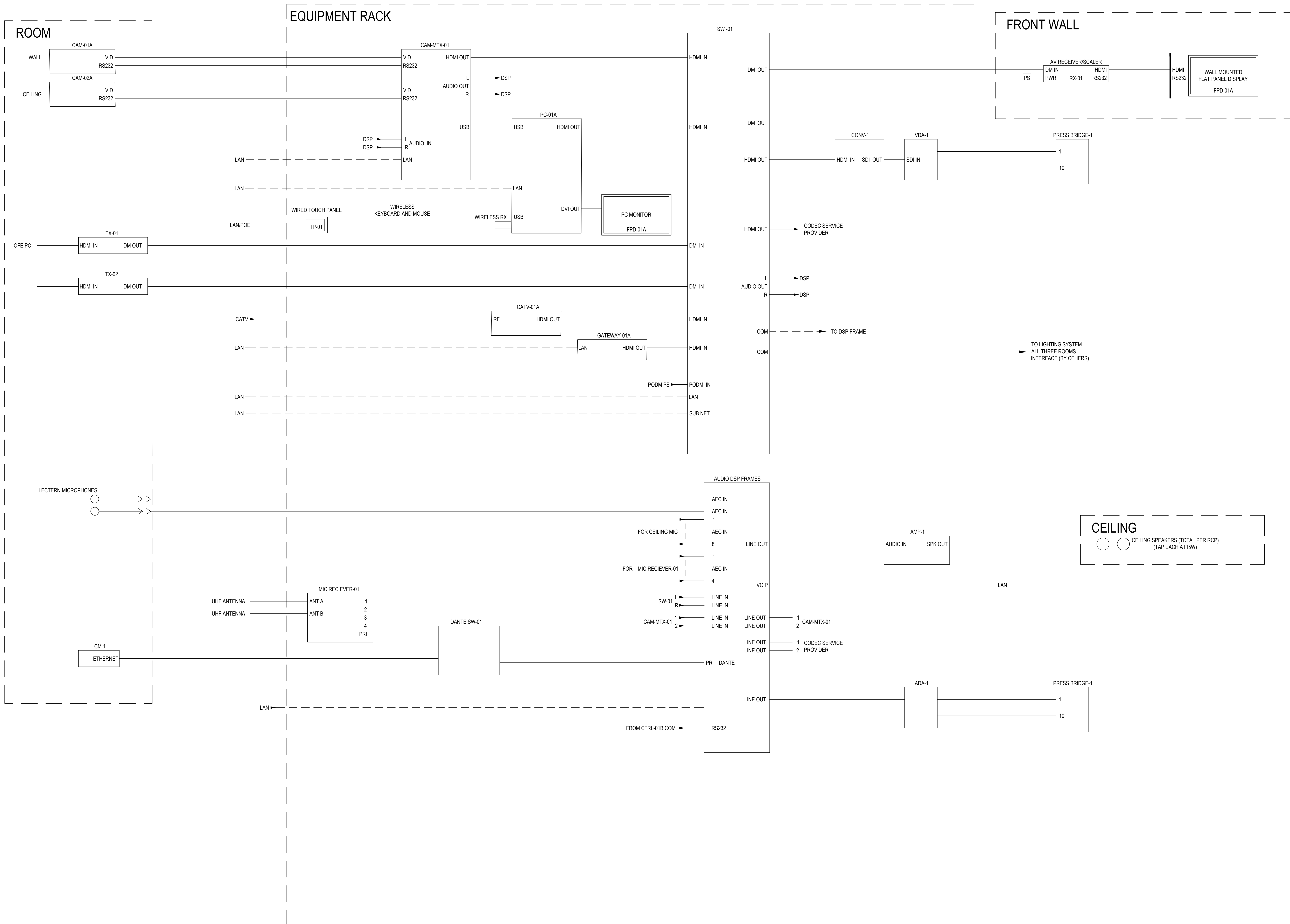
Project Number
 06.0069.000

Description
 DRAWING TITLE
 AV SYSTEMS DIAGRAM
 SMALL CONFERENCE ROOMS
 SEE LEGEND FOR RM ASSIGNMENT

Scale



TA-809.00



Date	Description
1 6/14/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
DRAWING TITLE
AV SYSTEMS DIAGRAM
PRESS ROOM

Scale
N/A
0 2 4 8 16

TA-810.00

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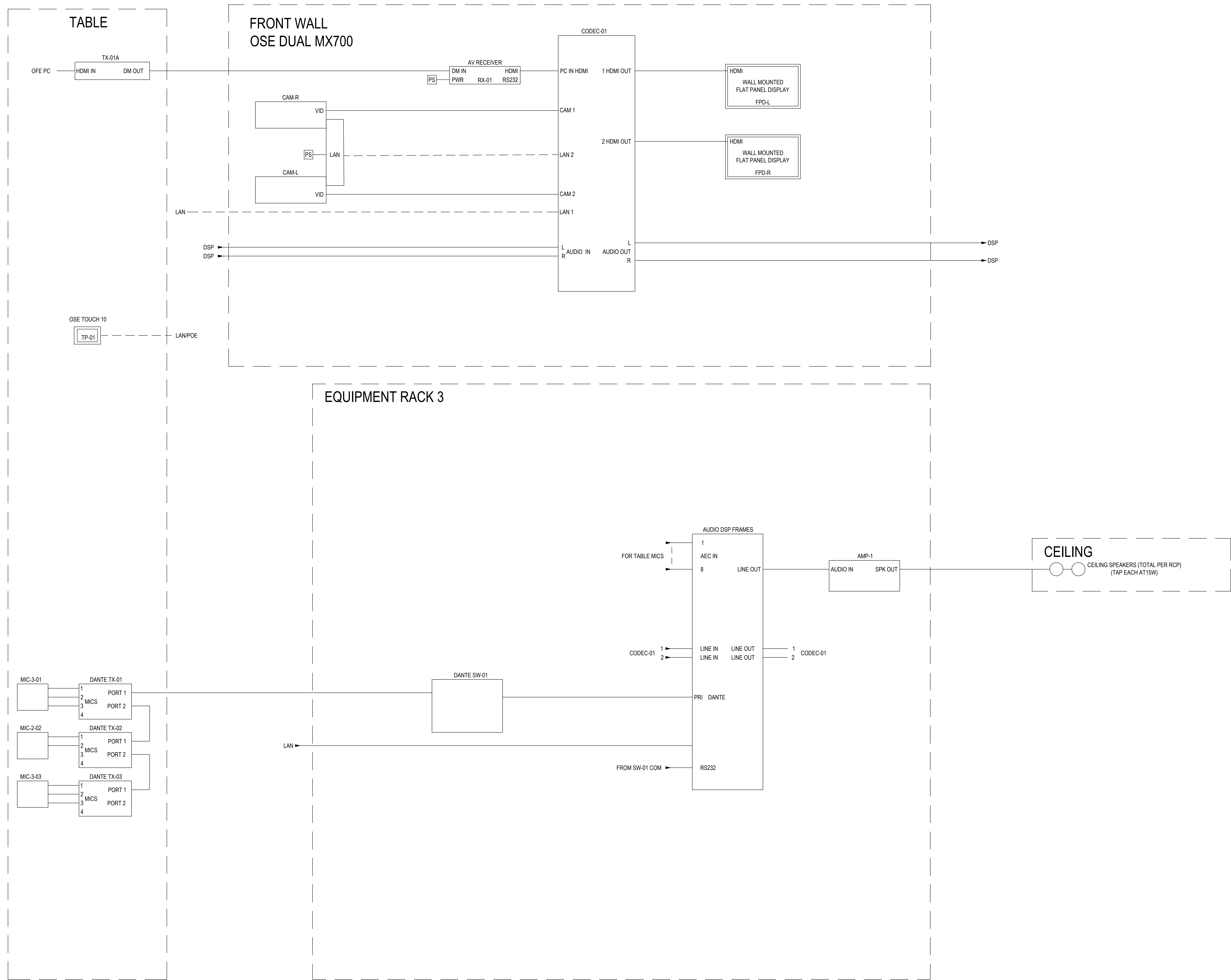
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Date	Description
6/14/2017	ISSUE FOR CONSTRUCTION, 100%

Seal / Signature

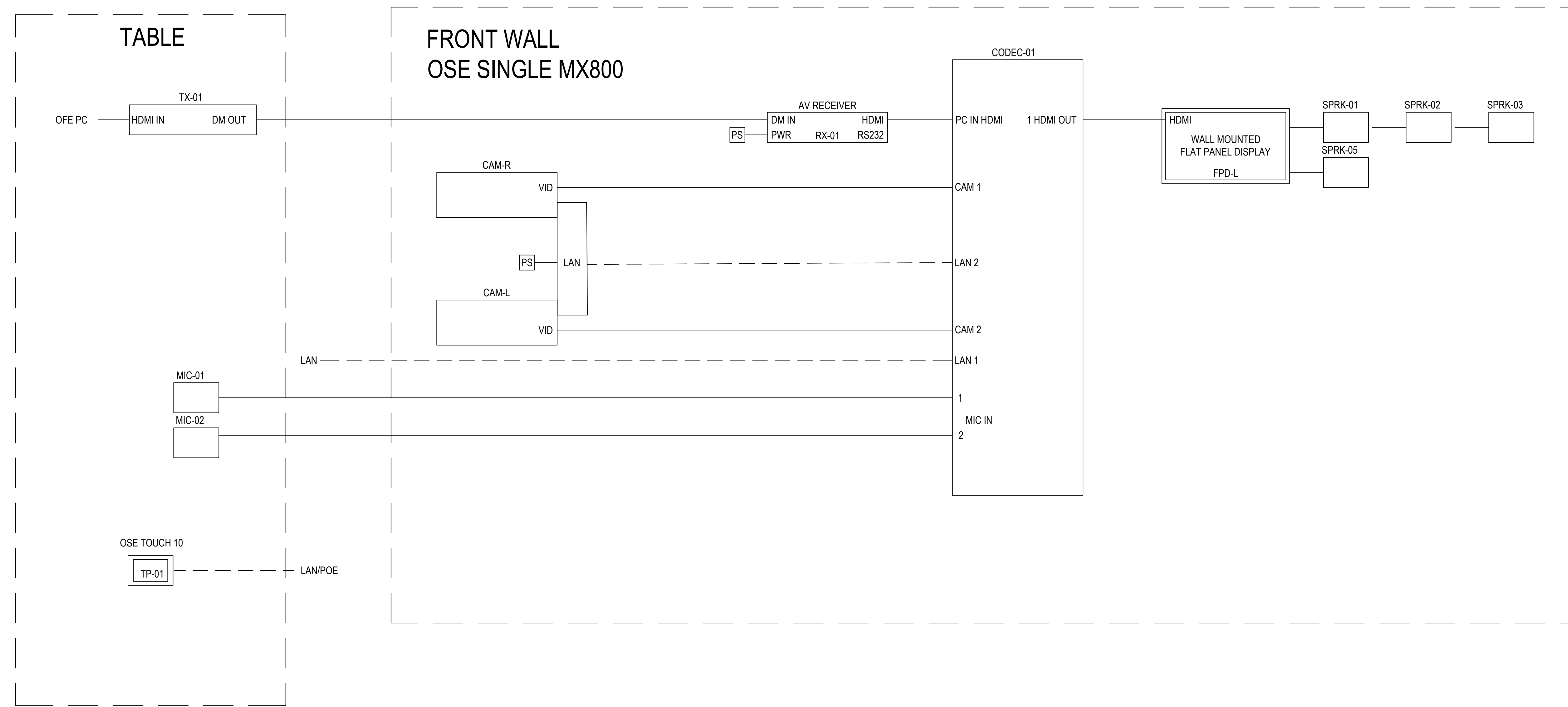
Project Name
 OGS / NYS OAG

Project Number
 06.0069.000

Description
 DRAWING TITLE
 AV SYSTEMS DIAGRAM
 EXECUTIVE CONFERENCE ROOM

Scale
 N/A
 0 2 4 8 16

TA-811.00



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Date	Description
6/14/2017	ISSUE FOR CONSTRUCTION, 100%

ROOM ASSIGNMENT
16P22, 16P23, 16P25
16P26, 16M28

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
DRAWING TITLE
AV SYSTEMS DIAGRAM (OSE EQUIP)
MEDIUM CONFERENCE ROOMS
SEE LEGEND FOR RM ASSIGNMENT

Scale
N/A

0 2 4 8 16

TA-812.00

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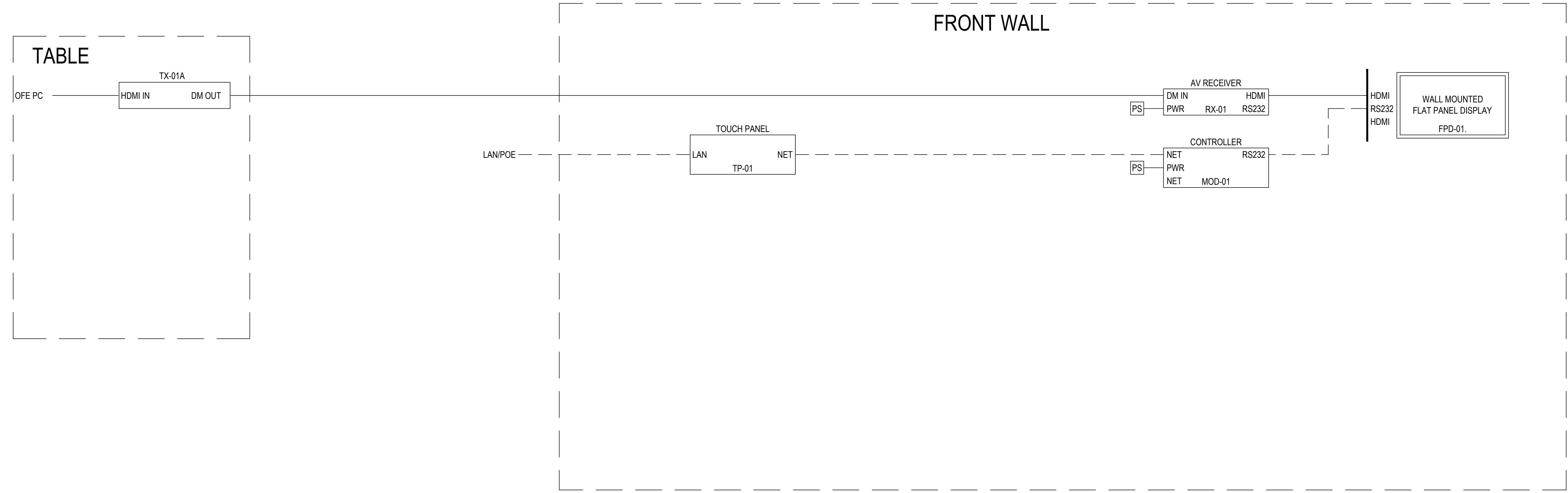
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Date	Description
6/14/2017	ISSUE FOR CONSTRUCTION, 100%

ROOM ASSIGNMENT
14Q23, 16A23, 16A05,
17A14, 18Q26, 19Q15,
19A04, 20Q20

Seal / Signature

Project Name
OGS / NYS OAG

Project Number
06.0069.000

Description
DRAWING TITLE
AV SYSTEMS DIAGRAM
SMALL HUDDLE ROOMS
SEE LEGEND FOR RM ASSIGNMENT

Scale
N/A

0 2 4 8 16
TA-813.00

APPENDIX 7
LIGHTING SPECIFICATIONS

PROJECT

**New York State
Office of the Attorney General
NY, NY**

HDLC PROJECT No. 7006

LIGHTING FIXTURE SPECIFICATION

ARCHITECT:

GENSLER

DATED:

April 28, 2017

March 20, 2017

November 6, 2015

ISSUED:

Issued for 90% CD

Issued for Engineering

Issued for Owner Use

ARCHITECTURAL LIGHTING FIXTURES
SECTION 26 51 00-0

SECTION 26 51 00
ARCHITECTURAL LIGHTING FIXTURES

PART 1 - GENERAL

1.01 GENERAL REFERENCE

- A. All Work of this Section shall comply with the requirements of the Conditions of the Contract (General, Supplementary, and Special), with all Sections of Division 1 - General Requirements, with the Drawings, and with all other Contract Documents.

1.02 DESCRIPTION OF WORK

- A. All information contained in the Fixture Schedule, Fixture Cuts, Layouts and Specifications shall be considered to form a complete and integrated Specification for Lighting Fixtures. The Contractor is responsible for contacting the Architect regarding the proper interpretation of all information indicated on the Lighting Fixture Schedules, Fixture Cuts and Details, the Electrical Plans and the Reflected Ceiling plans.
- B. The Contractor is responsible for all fixture quantities, lengths and clearances required. The Contractor shall inform the Architect of project conditions, which affect installation, or fixture location at the time submission is made.
- C. Any exception to the following Specifications shall be qualified in writing by the Contractor prior to the submission of bids. Only upon the Contractor's receipt of the Architect's written approval of the requested exception shall the Contractor's bid be accepted by the Owner.
- D. At each location shown on the drawings, furnish and install a lighting fixture of the type indicated.
- E. Furnish and install all materials, accessories and other equipment necessary for the complete and proper installation of all lighting fixtures included in this Contract.
- F. Fixtures shall be manufactured in strict accordance with the Contract Drawings and Specifications.
- G. Specifications and scale drawings are intended to convey the salient features, function and character of the fixtures only, and do not undertake to specify every item or detail necessary. Minor details necessary for the proper execution and completion of the fixtures not indicated on the drawings nor specified shall be provided as if they were specified here or indicated on the drawings. Parts not specifically identified shall be made of materials most appropriate for their intended use.
- H. The Owner shall not be held responsible for the omission or absence of any detail, construction feature, etc. which may be required in the production or installation of the lighting fixtures. The responsibility of obtaining all information necessary for accurately fabricating the lighting fixtures to the fulfillment of this specification rests with the Contractor.
- I. Contractor shall furnish unit fixture costs during all bidding phases. "Packaging" or lump sum pricing is not acceptable.

- J. Contractor shall provide unit costs for each listed approved manufacturer for each fixture type. Owner shall be entitled to “cherry pick” individual fixtures at their sole discretion, at published unit prices. Separate fixture, lamp, and installation costs shall be provided for each individual fixture type for each manufacturer as required by Architect.
- K. Unit costs for all equipment shall apply to the Owner for all fixtures, regardless of quantity or use of fixtures, for the full term of the project, or 12 months whichever is shorter.
- L. Unit price format shall be MS Excel listed as “Quantity x Unit Price = Extended Price” for each fixture and fixture variant.

1.03 ALTERNATES

- A. Alternates shall meet performance and aesthetics of primary specification, subject to final judgment by the Designer. Furnish requested review samples within one week of request or Contractor will be bound to provide primary specification

1.04 RELATED WORK SPECIFIED ELSEWHERE

- A. Related Sections of electrical Work: Refer to pertinent Division 16 Electrical Sections for information relevant to this Section.

1.05 SUBMITTALS AND SHOP DRAWINGS

- A. Submit all manufacturers’ most current printed specification data for all products, including associated hardware and/or details related to the installation for each unique fixture type.
- B. Shop drawings of all custom or modified standard lighting equipment shall be submitted in reproducible sepia form only. Shop Drawings shall be drawn at either full size or half-full size wherever practical. Shop Drawings shall illustrate a minimum of three (3) critical views indicating all fabrication and assembly methods, materials, material gauges and finishes to be employed, electrical supply, mechanical support, electrical accessories, etc. Shop Drawings of custom and modified standard fixtures shall clearly indicate the fixture type, the drawings referenced in the development of the shop drawings and the names of the project, Architect and Lighting Consultant. Shop Drawings of standard fixtures shall clearly indicate the fixture type and space permitting, the names of the project, Architect and Lighting Consultant.
- C. For any fixture fabricated to specified dimensions, field verified dimensions, or comprised of modular components (this may include, non-exclusively: continuous troughs, track lighting, continuous suspended pendants, and the like) shall be submitted in scaled drawing form prepared in AutoCAD or BIM format at the Architect’s request. Drawings shall indicate overall lengths, system components, suspension points, run configurations, feed points, running gear, and the like). The shop drawing shall contain all the information required to assess all attributes of the installation scope, for Architect’s review and for the Contractor’s understanding of the overall workscope.
- D. Submittals lacking sufficient detail to indicate compliance with Contract documents will be rejected without review and any penalty for delay will borne by the Contractor.

- E. Review of shop drawings or samples does not waive Contract requirements.
- F. Fixtures substitutions (from manufacturers other than those listed as approved equal) shall be equal in all respects of performance, quality of construction, suitability to project conditions and appearance of the specified fixture. The Lighting Designer will be the sole arbiter of what constitutes an "equal." Substitutions shall be submitted for consideration in the form of catalog cuts or detail drawings not later than three weeks before base bids are due to allow for timely processing. Provided with the substitution submission shall be unified cost savings for substitute product in comparison to base specified product, as well as Contractors' cost basis for the equipment. Actual fixture samples shall be provided at the same time the substitution paperwork is submitted. Substitutions will not be entertained without all this information. Disapproved substitutions shall be withdrawn and a submission for a listed approved manufacturer shall follow with no time penalty to the project.
- G. "Approved Equal" specification status does not exempt the identified manufacturers from full and complete compliance with all criteria identified either in the specification or as attributed to "prime specification" equipment with regard to photometric performance, brightness control, aperture size, finishes, trim configuration, etc.
- H. No variation from the general arrangement, dimensions and details indicated on the drawings shall be made on the shop drawings unless required to suit field conditions, and then only with the written approval of the Architect. All variations must be clearly marked as such on drawings submitted for approval.
- I. Dimensions and configurations of continuous fixtures shall be field verified by the fixture manufacturer.
- J. Shop drawings shall be submitted for approval before fabrication. Fabrication details may vary slightly from those shown on drawings provided those changes do not adversely affect ease of installation, durability, performance or appearance of fixture.
- K. Reflector curves shown are for representation only. Curves shall be mathematically determined and empirically tested by the fixture manufacturer to achieve distributions indicated. Dark areas, hot spots, rings, etc. shall not be acceptable.
- L. Upon request, supply complete photometric data for the fixture furnished by a recognized independent testing laboratory using methods recommended by the Illuminating Engineering Society of North America.

For direct and semi-direct fixtures used for general illumination:

1. Visual Comfort Probability data (fluorescent only for 100 footcandles), rooms with reflectances of 80% (ceiling) 50% (walls), and 20% (floor), including a (20 ft. by 20 ft.) room with 10 ft ceiling and luminaires lengthwise.
2. Coefficients of utilization.
3. Candlepower data, presented graphically and numerically, in 5° increments (5°, 10°, 15° etc.). Data developed for up and down quadrants normal, parallel, and at 22¹/₂°, 45°, 167¹/₂° to lamps if light output is asymmetric.

4. Zonal lumens stated numerically in 10° increments (5°, 15°, etc.) as above.

For area and roadway luminaires:

5. Isocandela and / or isofootcandle charts.
6. Coefficients of utilization.
7. IES roadway / area lighting distribution classification.

1.06 SAMPLES

- A. Upon the request of the Architect or Lighting Consultant, after shop drawing review and prior to release for manufacturing, Contractor shall submit for approval one complete and functioning representative sample (and / or mock-up of any fixture component) within 30 days of request of any lighting fixture required under this Contract. Approved sample fixtures shall be sent to the project for use as a standard. If the sample fixture is disapproved, the Contractor shall immediately submit the initially named manufacturer for approval.
- B. Pursuant to the sample provisions above Contractor shall provide, for inspection of finish and workmanship, functioning samples of all fixture types requested by Architect. Refer to fixture specification for additional sample requirements.
- C. Samples shall be complete with specified lamp(s), ready for hanging, energizing, and examining, and shall be shipped to the Lighting Consultant, or as otherwise advised by the Architect. Fixtures designed to be operated at voltages other than 120V shall be shipped with an appropriate buck or boost transformer to permit 120V operation during examination.
- D. All shipping costs shall be prepaid by the Contractor.
- E. The Architect and Lighting Consultant shall be allowed ten business days from date received for thorough examination of the samples.

1.07 REFERENCE STANDARDS

- A. Materials and installation shall be in accordance with the latest revision of the Electrical Code adopted by the local municipality and all applicable Federal, State and other codes and regulations.
- B. All fixtures shall be manufactured in strict accordance with the appropriate and current requirements of the Electrical Code adopted by the local municipality, Underwriters' Laboratories, Inc. "Standards for Safety," and other standards as deemed applicable. A code authority approved listing shall be provided for each fixture type, and the appropriate label or labels shall be affixed to each fixture in a position concealed from normal view, either directly or as a reflected image.

1.08. QUALIFICATION OF BIDDERS

- A. "Base Bid" and "Approved Equal" manufacturers listed in the fixture schedule may be assumed capable of supplying the fixtures as specified. Manufacturers not listed must have a minimum of five years' experience in design and manufacture of lighting fixtures of the type and quality shown. A pre-qualification submission shall include a list of completed projects and dates of completion as well as samples, which represent the type and quality of the fixture(s) specified. The Architect and the Lighting Consultant shall be the sole judges of whether the substitute manufacturer can comply with the specifications.
- B. "Base Bid" and "Approved Equal" manufacturers listed must have experience furnishing equipment to a project of this project's magnitude. Furnish a list of projects with references to substantiate as required.

1.09 DELIVERY, STORAGE AND HANDLING

- A. The Contractor shall receive, handle, and store equipment in such a manner as to prevent damage, to equipment, nor impede the progress of work.

1.10 COORDINATION

- A. Where lighting equipment interfaces with or relies upon architectural enclosures, substrates, or bonding material, the Contractor shall coordinate subcontractors work and demonstrate coordination via the shop drawings and/or mock-ups as necessary.

1.11 QUALITY ASSURANCE

- A. Materials, equipment and appurtenances as well as workmanship provided under this Section shall conform to the highest commercial standard.
- B. The Contractor shall coordinate the lighting fixture installation with the drawings and details of the Architectural, Structural, Electrical, Mechanical, and other related trades to assure a perfect and efficient installation.

1.12 WARRANTY

- A. The Manufacturer shall warrant the fixture, its finishes, and all of its component parts, except ballasts, acrylic plastic lenses and Alzak parabolic cones to be free from defects for a period of one year from date of acceptance if operated within rated voltage range. Ballasts shall be warranted for two years. Alzak parabolic cones shall be guaranteed against discoloration for a minimum of ten years. Acrylic plastic lenses and diffusers shall remain free of any dimensional instability, discoloration, embrittlement, or loss of light transmittance for 15 years. Replacement of faulty materials and the cost of labor required to make the replacement shall be the responsibility of the Contractor.
- B. Lamps shall be warranted from the contractor for labor and equipment replacement, should lamps fail outside the design parameters of the lamp manufacturer.

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April 28, 2017
Issued for 90% CD

NYS OAG
28 Liberty NY, NY

ARCHITECTURAL LIGHTING FIXTURES

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PART 2 - PRODUCTS

2.01 SCHEDULE OF EQUIPMENT

- A. Refer to Part 4. For catalog data refer to attachment (SECTION 16500 – Paragraph 3.07).

2.02 FIXTURE CONSTRUCTION (GENERAL)

- A. All lighting fixtures shall be listed and labeled by Underwriters' Laboratories, Inc. or code approved equal, for installation in fireproof or non-fireproof construction, damp or wet locations, as required by project conditions.
- B. All materials, accessories, and other related fixture parts shall be new and free from defects which in any manner may impair their character, appearance, strength, durability or function.
- C. All sheet metal Work shall be free from tool marks and dents, and shall have accurate angles bent as sharp as compatible with the gauges of the required metal. All interSections and joints shall be formed true of adequate strength and structural rigidity to prevent distortion after assembly.
- D. All castings shall be exact replicates of the approved patterns and shall be free of sand pits blemishes, scales and rust, and shall be smoothly finished. Tolerance shall be provided for shrinkage of the metal castings to assure accurate fit.
- E. Fabricate fixture enclosures with a minimum of #20 gauge (0.0359 inch) thick cold rolled sheet steel. Enclosures may be constructed of other metals, provided they are equivalent in mechanical strength and acceptable for the purpose. Fabricate lighting fixtures to be finished in vitreous porcelain enamel from a minimum of #20 gauge enameling steel.
- F. All screws, bolts, nuts and other fastening and latching hardware for steel and aluminum fixtures shall be cadmium or equivalent plated. All screws, bolts, nuts and other fastening and latching hardware for stainless steel fixtures shall be stainless steel or bronze.
- G. All lamp sockets in lighting fixtures shall be suitable for the specified lamp(s) and shall be set so that the lamp(s) are positioned in optically correct relation to all lighting fixture components. If adjustable socket positions are provided, socket shall be preset in factory for lamp(s) specified. If different socket positions are specified for same fixture, sockets shall be preset for each type, and cartons marked accordingly. Where modified / standard fixtures are specified, fixtures shall be modified as required with lamp sockets positioned to provide desired photometric performance.
- H. All lighting fixtures which have a beam angle adjustment shall have reliable angle locking devices. All lighting fixtures with lamps that produce oval beam patterns shall contain lamp orientation locking devices to insure that beam orientation is not disturbed during relamping or cleaning. Each light fixture, which has a spread lens, shall contain lens orientation locking devices to insure that lens orientation is not disturbed during lamp replacement or cleaning.

- I. Housings shall be constructed so that electrical components are easily accessible and replaceable without removing fixtures from their mountings or disassembly of adjacent construction. All fixtures shall be factory pre-wired.
- J. All fixtures and ballasts must operate within the temperature limits of their design and as specified by Underwriters' Laboratories, Inc. for the applications and mounting conditions specified. Recessed fixtures installed in insulated ceilings shall be provided with thermal protection.
- K. If required by the ceiling system(s), each recessed and semi-recessed fixture shall be furnished with a mounting frame or ring compatible with the ceiling in which they are to be installed. The frames and rings shall be one piece or constructed with electrically welded butt joints and shall be of sufficient size and strength to sustain the weight of the fixture.
- L. Light leaks between ceiling trim of recessed lighting fixtures and the ceiling are not acceptable. For fixtures used in partially transparent ceilings, light leaks above the ceiling line are not acceptable.
- M. Fixtures for use outdoors shall be suitably gasketed to prevent the entrance of moisture. Provide approved wire mesh insect screens for ventilation openings. Install and seal all lighting fixtures and associated equipment in damp or wet locations as per fixture / equipment manufacturers recommendations. All equipment used outdoors shall be constructed of materials suitable for the environment in which it is to be installed: e.g. in a salt air environment, use materials such as copper-free aluminum, stainless steel, etc: in a cold environment provide 0° rated fluorescent ballasts, etc.

2.03 FINISHES

- A. Painted surfaces shall be synthetic enamel, with acrylic, alkyd, epoxy, polyester, or polyurethane base, light stabilized, baked on at 350° Fahrenheit minimum, catalytically or photochemically polymerized after application.
- B. White finishes shall be minimum 85% reflective unless otherwise specified.
- C. Ceiling opening frames shall either be manufactured of nonferrous metal, or be suitably rust proofed after fabrication.
- D. Unless otherwise noted, the finish and color of all exposed metal parts shall be as selected by the Architect from the fixture manufacturers' standard finish range.
- E. After fabrication and before final painting, give ferrous metal surfaces a five-stage phosphate undercoat treatment or other acceptable base bonding treatment, except for stainless steel surfaces.
- F. Unpainted non-reflecting surfaces shall be satin finished and coated with a baked-on clear lacquer to preserve the surface. Where aluminum surfaces are treated with an anodic process, the clear lacquer coating may be omitted.
- G. Finish interior unpainted aluminum trims with an anodized coating; color and surface finish as selected by the Architect.
- H. Apply porcelain finishes smoothly. Porcelain finish shall be not less than 7.5 mil thick of non-yellowing, white, vitreous porcelain enamel with a reflectance of not less than 85%.

2.04 INCANDESCENT, HIGH INTENSITY DISCHARGE (H.I.D.) AND LOW VOLTAGE INCANDESCENT LIGHTING FIXTURES

- A. Aluminum reflectors shall be Alzak (finish as selected) unless otherwise noted and not less than 0.057 inch thick unless specified otherwise.
- B. Lighting fixtures utilizing tungsten halogen sources shall be designed and constructed so that lamp seal temperatures do not exceed 350° C at an ambient of 25° C when tested in accordance with U.L. Standard #57 and shall maintain an operating bulb wall temperature of approximately 600° C and not less than 250° C.
- C. Socket lead wires for fixtures utilizing tungsten halogen sources shall be rated for not less than 200° C, but shall be rated for 250° C if temperature warrants.
- D. Socket lead wires for H.I.D. fixtures shall be rated for no less than 200° C operation, but shall be rated for higher temperature if duty warrants.
- E. All fixtures designed to be recessed in suspended ceilings shall be supplied with pre-wired junction boxes.
- F. Remote step-down transformers and associated secondary wiring shall be sized installed within NEMA enclosures and acoustically isolated mounts to assure quiet operation. Transformers found by the Architect to be unduly noisy shall be replaced without charge prior to acceptance of the job.
- G. All remote transformer installations shall utilize transformers located in a remote, accessible, ventilated, sound attenuated location in accordance with transformer manufacturer's specifications and as indicated on electrical drawings.
- H. All secondary wiring shall use the quantity of homeruns as indicated in electrical drawings or manufacturer's submittal drawings, or as determined in the field by the electrical contractor due to secondary run lengths required.
- I. Electrical contractor shall determine wire gauge sizes, and secondary lengths as necessary to limit voltage drop to 5% for 24V systems and 3% for 12V systems.
- J. Electrical contractor to provide equal secondary length wiring for all homeruns, in order to achieve uniform illumination of luminaires, regardless of distance from transformer.
- K. When multi-tap step-down transformer power supply assemblies are specified, the electrical contractor shall order transformers with multi-tap secondaries to allow both over-voltage and under-voltage wiring to luminaires.
- L. Remote step-down transformers shall be composed of a power distribution enclosure with toroidal transformer; integral fused distribution bus for each secondary lead and is suitable for surface mounting or within 3 1/2" deep wall cavity. Provide transformer configuration specific to load requirements either for Class I or Class II wiring.

ARCHITECTURAL LIGHTING FIXTURES

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- M. Temperature on the exterior of fixture housing and auxiliaries shall not exceed 205° C at any point.

2.05 FLUORESCENT LIGHTING FIXTURES

- A. Housing end plates, socket bridges, reflectors, wiring channels and ballast covers shall be die formed of not less than #20 gauge (0.0359 inch thick) cold rolled steel unless specified otherwise.
- B. Mount lamps on rapid-start circuits within one inch of grounded metal, minimum one inch wide, as long as lamp.

2.06 FLUORESCENT BALLASTS

- A. Use the most efficient combination of four, three, two and / or single lamp high frequency electronic ballasts in fluorescent fixtures. Fluorescent lighting fixture ballasts (except single reactor type) shall be equipped with an internal, automatic resetting thermal protector adjacent to the coils, and a one time non-resetting thermal device to protect the capacitor.
- B. Unless otherwise noted, linear and compact fluorescent non-dim ballasts shall be electronic, high power factor, high efficiency, low loss type with THD <10%, as manufactured by Lutron, Advance, Osram-Sylvania or approved equal. Ballasts shall be listed by Underwriters' Laboratories Inc., as Class "P". All ballasts shall be CBM certified by ETL label, except for dimming ballasts. All ballasts shall be the Class A sound rating, with the rating clearly indicated on the ballast case. Ballasts found by the Architect to be unduly noisy shall be replaced without charge prior to acceptance of the job.
- C. All dimming ballasts shall be Lutron "Hi-lume" series, unless specifically noted otherwise in fixture schedule.
- D. Relative light output (percentage of light emitted with reference tube and ballast) shall not be less than 100% unless specifically noted otherwise in fixture schedule.
- E. Ballasts shall be designed and constructed to maintain a case temperature not greater than 90° C when operated at a room ambient of 50° C when tested in accordance with U.L. and CBM standards.
- F. Ballasts shall be designed for single frequency operation, nominal 60 Hz, and shall be operated at the voltage indicated on label, 120 volt and / or 277 volt as directed by the Electrical Engineer. Final coordination of appropriate voltages shall be by Contractor.
- G. Secure ballasts firmly in lighting fixtures to prevent vibrations.
- H. Emergency back-up ballasts.
 - 1. Provide ballast as referenced on the electrical drawings.
 - 2. Ballasts shall provide lighting for 90 minutes minimum, or as specified by local code.
 - 3. For all emergency ballasts, furnish required LED indicator lighting and/or test switch as an integral part of the luminaire. Mount in a location out of normal view, such that the optical performance of the fixture is unaltered.
 - 4. Acceptable manufactures: Light Alarms, Bodine.
 - 5. Separate wall or ceiling plates to house LED indicator lights and/or test switches are

ARCHITECTURAL LIGHTING FIXTURES

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unacceptable.

- I. Remote ballasts or emergency battery ballasts shall be furnished in NEMA enclosures ready for mounting and connection. Enclosures with more than one ballast shall be furnished pre-wired. Provide acoustically isolated mounts for remote ballasts and ballast enclosures to assure quiet operation.
- J. Continuous runs of fluorescent lamps indicated as one dimmed control zone and is comprised of more than one length or milliamperage rating shall be circuited and dimmed separately. Exception; lamps dimmed with Lutron Electronics, Inc. "Hi-lume" ballasts may mix various lengths (but not milliamperage ratings) in one zone when installed as per manufacturers' instructions.

2.07 H.I.D. (HIGH INTENSITY DISCHARGE) BALLASTS

- A. Ballasts for H.I.D. lamps shall be the manufacturer's best (quietest) sound rating, with the rating clearly indicated on the ballast case. Ballasts found by the Architect to be unduly noisy shall be replaced without charge prior to acceptance of the job.
- B. Ballasts for H.I.D. lamps shall be constant wattage, high power factor, auto transformer type, and shall be designed for single frequency operation, nominal 60 Hz, and shall be operated at the voltage indicated on label; 120V, 208V, 240V, 277V or 480V as directed by the Electrical Engineer. Final coordination of appropriate voltages shall be by Contractor.
- C. Core and coil ballasts shall be encased and potted for maximum noise reduction and shall be secured firmly to acoustically isolated mounts.
- D. Remote ballasts for H.I.D. lamps shall be furnished in NEMA enclosures ready for mounting and connection. Enclosures with more than one ballast shall be furnished pre-wired. Provide acoustically isolated mounts for remote ballasts and ballast enclosures to assure quiet operation.
- E. For ceramic arc-tube metal halide lamps provide compatible electronic ballasts, acceptable manufactures Aromat/VS or Hatch. Utilize specific ballast only if referred to within lighting fixture schedule.

2.08 REFLECTORS, TRIMS AND LENSES

- A. Reflectors, cones or baffles shall be absolutely free of spinning lines, ripples or any marks or indentations caused by riveting or other assembly techniques. No hardware shall be visible after installation.
- B. Lenses, reflectors, reflector cones and visible trim of all lighting fixtures shall not be installed until completion of plastering, ceiling tile work, painting and general cleanup. Trim specified to be painted to match surrounding conditions shall be removed from the fixture housing prior to painting and be allowed adequate (minimum 24 hours) drying time before insertion into housing. Trims shall be carefully handled to avoid scratching or fingerprinting and shall be completely clean at the time of acceptance by the Owner.
- C. All Alzak parabolic cones shall be guaranteed against discoloration for a minimum of ten years, and, in the event of premature discoloration, shall be replaced by the manufacturer, including both materials and the cost of labor.

- D. Aluminum reflectors shall be finished specular, semi-specular, or diffuse as specified and shall meet or exceed Alzak specifications. Minimum requirements of reflector finishes for interior and exterior service shall be as follows:

DESCRIPTION OF SERVICE CONDITIONS	MINIMUM COATING WEIGHT, MILLIGRAMS PER SQUARE INCH	SPECULAR FINISH, MINIMUM REFLECTANCE	DIFFUSE FINISH, MINIMUM REFLECTANCE
Normal interior commercial service.	5.0	83%	75%
General interior and exterior service with reflector protected with glass covering.	7.5	82%	73%
Exterior industrial and commercial service with reflector not protected.	10.0	78%	75%
Exterior marine service.	13.0	78%	65%

- E. Optical lenses shall be free from spherical and chromatic aberrations and other imperfections, which may hinder the functional performance of the lenses.
- F. Plastic for lenses and diffusers shall be formed of colorless 100% virgin acrylic as manufactured by Rohm & Haas, DuPont, Acrylite or approved equal. The quality of the raw material must exceed IES, SPI, and NEMA Specifications by at least 100% which, as a minimum standard, shall not exceed a yellowness factor of 3 after 2,000 hours of exposure in the fade-meter or as tested by an independent test laboratory. Acrylic plastic lenses and diffusers shall be properly cast, molded or extruded as specified.

- G. For continuous lensed fixtures, the following chart listing approved lens lengths and combinations shall be adhered to:

FIXTURE LENGTH	LENS QUANTITY	LENS LENGTH
Shorter than or equal to 8'-0"	1	Match fixture
8'-1" through 16'-0"	2	Equal segments
16'-1" through 24'-0"	3	Equal segments
24'-1" through 32'-0"	4	Equal segments
32'-1" through 40'-0"	5	Equal segments
40'-1" through 48'-0"	6	Equal segments
48'-1" through 56'-0"	7	Equal segments
56'-1" through 64'-0"	8	Equal segments

- H. Glass used for lenses, refractors, and diffusers in incandescent lighting fixtures shall be tempered for high impact and heat resistance; the glass shall be crystal clear in quality with a transmittance of not less than 88%. For exterior fixtures use tempered Borosilicate glass, tempered Corning #7740 or approved equal. For fixtures directly exposed to the elements, aimed above the horizontal and with a radiant energy of 4.16 watts per square inch or greater, use Vycor glass.
- I. Lenses, louvers, or other light diffusing elements shall be removable, but positively held so that hinging or other normal motion associated with cleaning or relamping shall not cause them to drop out. All removable trims shall be provided with safety chains or cords.
- J. All lenses, louvers, or other light diffusing elements shall illuminate uniformly; free of shadows, hot-spots, or dead-spots.

2.09 LAMP HOLDERS

- A. Incandescent and high-intensity discharge lamp holders shall be fabricated of porcelain with a nickel-plated brass screw shell. Pre-lubricate lamp holders with silicone compound. Provide medium base sockets for lamps to and including 250 watts (rated for 1500W, 600V service) unless specified otherwise. H.I.D. lampholders shall be heavy-duty pulse-rated type.
- B. Linear and compact fluorescent lamp holders shall be fabricated of heavy white thermoset urea plastic with a definite locking-in feature and silver plated contacts. Exposed outdoor lamp holders shall be compression neoprene gasketed type. Sockets with open-circuit voltage over 300 volts shall be safety type designed to open supply circuit on lamp removal.

2.10 LAMPS

- A. Unless otherwise indicated, all lamps specified shall be as manufactured by General Electric, Osram/Sylvania, Philips or Venture. Substitutions by other manufacturers shall be equal in all respects of the following: initial and maintained lumen output, lamp life, color temperature, correlated color temperature (in° Kelvin) and compatibility with specified equipment. Submit substitutions for approval in the form of manufacturer's printed data and corresponding lamp samples for review.
- B. All lamps of a given type shall be supplied by the same manufacturer.
- C. If a specific manufacturer is noted in the lighting fixture schedule, only that manufacturer shall be acceptable.
- D. Prior to final inspection, incandescent and tungsten halogen lamps shall not be operated other than for initial testing.
- E. Ceramic arc-tube metal halide lamps shall be Philips "Master Color" series without exception.
- F. Fluorescent T8 lamps and compact fluorescent lamps shall be classified as "non-hazardous waste" by the EPA and California.
- G. Fluorescent lamps used in congruent with dimming ballast. Provide "burn-in" period as specified by dimming ballast manufacturer for all lamps being dimmed. Deliver project to owner with all lamps "burned-in" and functional, with a maximum of 200 hours burn time.

2.11 SOLID STATE LIGHTING

- A. Light Emitting Diodes – Single Color White
 - 1. Correlated Color Temperature (CCT) - provide CCT of 2700K, 3000K, 3500K or as otherwise specified.
 - 2. Color Rendering Index (CRI) – provide a minimum CRI of 82 for 2700K, 84 for 3000K-3500K, or as otherwise specified in schedule.
 - 3. Binning – binning shall meet in accordance with American National Standards Institute (ANSI) Specification #C78.377-2008.
 - 4. Visual Deviance - all LED products shall be visually color consistent at all locations. Manufacturer shall bench-sort fabricated product and ship only color consistent product. Final acceptance of any color variance shall be by the architect in field. Any rejected fixtures, modules, or segments shall be replaced by manufacturer at no expense to Owner.
 - 5. Lamp Life – minimum lamp life shall be 50,000 hours @ IES L₇₀ rating.
 - 6. Warranty – maximum failure rate shall be 0.1% of specific product type provided on project. Manufacturer shall warranty entire product (LED, board, drivers) for a period of 5 years from client acceptance of installation. Warranty shall include full cost of material and labor replacement. Manufacturer is responsible for color and output consistency of warranted installation with existing installed product. Manufacturer shall replace any existing product to ensure consistency.
- B. Acceptable LED manufacturers – LEDs shall be provided by Cree, Nichia, Philips or Lumileds unless otherwise specified in schedule.

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C. Drivers

1. All drivers shall be integral circuit board mounted, unless otherwise specified.
2. All drivers shall have built-in dimming capability with conventional dimming equipment, unless otherwise specified or required.
3. Driver warranty shall meet or exceed that of the L.E.D. warranty.

D. Dimming

1. For ALL fixtures indicated as dimmed on the plans, provide integral dimming drivers coordinated with control gear. Minimum dimming shall be 10% light output.
2. For Lutron dimming equipment, Contractor shall supply Lutron dimming driver interfaces integral to fixture as required, to the extent that the equipment is applicable to the particulars of the load technology.

E. Remote Driver Installation

1. Remote electronic LED driver and associated secondary wiring shall be sized installed within NEMA enclosures and acoustically isolated mounts to assure quiet operation. Transformers found by the Architect to be unduly noisy shall be replaced without charge prior to acceptance of the job.
2. All remote electronic LED driver installations shall utilize electronic LED driver located in a remote, accessible, ventilated, sound attenuated location in accordance with electronic LED driver manufacturer's specifications and as indicated on electrical drawings.
3. All secondary wiring shall use the quantity of homeruns as indicated in electrical drawings or manufacturer's submittal drawings, or as determined in the field by the electrical contractor due to secondary run lengths required.
4. Electrical contractor shall determine wire gauge sizes, and secondary lengths as necessary to limit voltage drop to manufacturer's stated limitations.
5. Electrical contractor to provide equal secondary length wiring for all homeruns, in order to achieve uniform illumination of luminaires, regardless of distance from electronic LED driver.
6. Manufacturer to prepare remote device layout drawings for review and approval.

2.12 MISCELLANEOUS

- A. All fixtures shall bear "wattage restriction labels" that correlate to the specified & approved lamp wattage designated for the project in the lighting fixture schedule.
- B. Wattage restriction labels shall apply to all fixtures, regardless of ability of fixture to accommodate various wattages.
- C. All track and busway applications shall be provided with current-limiting devices at all feed points per section, equal to quantities of heads shown on plans, unless otherwise indicated on plans and/or fixture schedule.

PART 3 - EXECUTION

3.01 SUBMITTALS PROCESS

- A. A comprehensive submittal shall be furnished for review to meet with the project schedule. The submittal shall be a document authored by the Contractor; a facsimile or direct photocopy of the Lighting Consultant's documentation does not constitute a formal submittal.
- B. Greater than two partial or piecemeal submittals will not be accepted. Should greater than two partial or piecemeal submittals be furnished to the design team, the Contractor will be expected to compensate the Lighting Consultant for additional time required to review and process the submittal. The cost of additional submittal reviews due to a piecemeal submittals will be \$1800 per review. These fees are due prior to the review completion. The Contractor shall bear the cost of any processing delay due to untimely payment or dispute of these fees.
- C. Partial submittals are only acceptable for subsequent reviews, to a maximum of one re- submittal.

3.02 EXPEDITING

- A. The Contractor is expected to have extensive experience in projects of the same like and kind as this project. The Contractor shall enlist a lighting fixture vendor with similar experience. The collective experience and local knowledge of the Contractor and his sub-Contractors shall demonstrate capacity to control the procurement of all lighting equipment in a timely manner. Provision of a bid for the project is representation from the Contractor that he meets the criteria above.
- B. The Contractor's proactive involvement in lighting fixture procurement is necessary. Submission of complete and comprehensive shop drawings conforming to the specifications is required. For custom fixtures, the Contractor shall allow ample time for at least two submittals, if required, to meet project schedule.
- C. Contractor shall identify long lead fixtures, and make necessary provisions for acquisition of these fixtures to meet project schedule. The Contractor shall enlist pre-purchase procedures where necessary, and/or identify fixtures that may jeopardize the project schedule BEFORE this bid is accepted.
- D. Timely provision and expediting of lighting fixture equipment shall be borne in its entirety by the Contractor. The Owner will not be liable for overtime fabrication, overnight freight, additional expediting fee services or other special cost-adding measures required to maintain project schedule after a bid has been accepted.
- E. The Owner has engaged the Contractor, as part of the base bid, for services indicated above. In the event the Contractor can not maintain project sequencing or schedule due to lighting fixture lead times regardless of a fixtures approval status, the design team's services may be enlisted to assist in fixture expediting. Expediting-assistance services are available to the Contractor to maintain his project schedule on a fee basis by the Lighting Consultant. A retainer equal to \$800 per individual fixture type shall be furnished to the Lighting Consultant prior to commencing with expediting-assistance services. Expediting-assistance services will be billed hourly against the

retainer at the rate of \$100 per hour. If the retainer is exhausted, continuing expediting-assistance services will not commence until another retainer amount of \$800 per individual fixture type is furnished to the Lighting Consultant. Any surplus fee will be refunded to the Contractor at the end of the project.

- F. The Lighting Consultant may assist in the expediting of equipment as noted above. The Lighting Consultant has no contractual agreement with fixture manufacturers nor does he have actual control of manufacturing or shipping. As such, the Lighting Consultant in no manner makes any representations that their services will guarantee fixture deliveries.

3.03 INSTALLATION

- A. Do not scale electrical drawings for exact location of the lighting fixtures. In general, the Architectural reflected ceiling plans indicate the proper locations of lighting fixtures. In the case of conflicts or inconsistencies in the plans or specifications, the Contractor shall promptly contact the Architect to request proper interpretation. Where fixture quantities are given in the Contract documents, they are for design reference only. The Contractor shall be responsible for all quantity take-offs.
- B. Install each fixture properly and safely. Provide necessary structural supports where required for the safe attachment of all lighting fixtures. Furnish and erect hangers, rods, mounting brackets, supports and other equipment required. Coordinate conduit entry locations with fixture manufacturers prior to roughing.
- C. Contractor shall be responsible for matching fixture rough in and trim configuration with ceiling system(s). Determine surface types from the Architectural drawings and furnish lighting fixtures with trim appropriate for the ceiling system(s) the fixture is to be mounted in. If required by the ceiling system(s), furnish a suitable mounting frame or ring for each recessed and semi-recessed fixture.
1. For all fixtures scheduled to be installed in a trimless, flush manner to drywall ceilings, a Level 5 finish shall be scheduled. Contractor shall use high-performance plaster within a 4' radius to the fixture (DuroBond or equal) to achieve a durable final finish not susceptible to cracking, crazing, flaking, or other failure over the long term. Contractor shall source sample fixture(s) for each scheduled luminaire in order to understand the mechanics of mounting the fixture firmly to the structure, and proper sequencing of construction. Trim-ring shall be set at true-level, and square. Plaster compound shall be finished flush to fixture trim-ring, without any build-up beyond the screen edge of trim-ring, to ensure a true flush finish. Contractor shall fare plaster out from trim-ring progressively for a minimum of a 2' radius and provide a seamless blend to surrounding ceiling finish. Work shall be undertaken with a worklight oriented to graze across ceiling to proactively identify any undue ripples, undulations, or other surface imperfections. Prior to paint coat, fixture trim-ring surfaces that receive final fixture reflector shall be cleaned of any plaster build-up. Paint finishing shall be applied so as not to create any texture or surface appearance that differs from surrounding ceiling area (i.e. brush "cut-in" marks, etc). Before installation of final reflector, contractor shall again remove any foreign material (plaster, paint, etc.) to ensure precise and clean mating surfaces of reflector to trim-ring, precisely flush to adjacent ceiling.

- D. Install pendant lighting fixtures plumb and true, at the height from the floor specified on the drawings. In cases where conditions make this impractical, refer to the Architect for a decision. Use ball aligners and canopies on pendant fixtures unless noted otherwise. Rigidly align continuous rows of lighting fixtures for true in-line appearance. Support all lighting fixtures independently of duct Work or piping. Whenever a fixture or its hanger canopy is applied to a surface mounted outlet box, provide a finishing ring to conceal the outlet box.
- E. Lighting fixture locations in mechanical and electrical equipment rooms are approximate. Coordinate mounting height and location of lighting fixtures with other trades to clear mechanical, electrical and plumbing equipment and to adequately illuminate meters, gauges and equipment that requires periodic servicing or inspection.
- F. In all uplight coves; fluorescent, cold cathode, incandescent, low voltage, LED, etc., fixtures shall be installed so as to provide a continuous and visually unbroken band of light in far-field and near-field viewpoints. Socket shadows, dark spots or visible light gaps are not acceptable.
- G. Each lighting fixture shall be packaged with clear, complete installation instructions. Install lighting fixtures in strict conformance with manufacturer's recommendations and instructions.
- H. Splices in internal wiring shall be made with approved insulated "wire nut" type mechanical connectors, suitable for the temperature and voltage conditions to which they are subjected. All wiring shall be suitable for temperature, current, and voltage conditions to which it is subjected, including internal wiring between individual lamp sockets, lamp auxiliaries, etc.
- I. Installation of fixtures requires extensive surface-mounted conduit that requires cleanly organized layouts including consistent bend radii from bending jigs, unistrut supports, and coordination with other trades. Refer to architectural and electrical drawings for conduit organization details.
- J. Effectively protect all lighting equipment against damage from the time of fabrication to final acceptance of the Work. Install reflector cones, baffles, aperture plates, light controlling element for air handling fixtures, and decorative elements after completion of ceiling tiles, painting and general cleanup. Replace blemished, damaged or unsatisfactory fixtures as directed.

3.04 AIMING AND ADJUSTMENT

- A. All adjustable lighting units shall be aimed, focused, locked, etc., by the Contractor under the supervision of the Lighting Consultant. The Lighting Consultant shall indicate the number of crews required. All aiming and adjusting shall be carried out after the entire installation is complete. All ladders, scaffolds, etc. required shall be furnished by the Contractor at the direction of the Lighting Consultant. As aiming and adjusting is completed, locking set screws and bolts and nuts shall be tightened securely.
- B. Where possible, lighting fixtures shall be focused during normal business hours. However, where daylight interferes with aiming and focusing, this Work shall be performed at night at no additional cost to Owner.

3.05 CLEANUP

- A. Furnish all available maintenance data for each lighting fixture to the Owner, including tools required for routine maintenance, types of cleaners to be used, replacement parts lists and for custom or modified custom fixtures, as-built shop drawings.
- B. At the time of final acceptance by the Owner, all lighting fixtures shall have been thoroughly cleaned with materials and methods recommended by the manufacturers, all broken parts shall have been replaced, and all lamps shall be operative.

3.06 EXTRA STOCK / SPARE PARTS

- A. Furnish 8% extra stock of replacements lamps to Owner, labeled and organized per Owner requirements.
- B. When 8% of each lamp type represents less than a manufacturers standard case quantity, provide an unbroken case with the additional lamps for attic stock.

3.07 SCHEDULE OF EQUIPMENT

PART 4 – SCHEDULE OF FIXTURES

4.01 “F” SERIES –INTERIOR ARCHITECTURAL FIXTURES

TYPE "FA"	RECESSED NOMINAL 4"W LINEAR LED SLOT
MOUNTING	RECESSED IN ACT CEILING WITH TEGULAR FITMENT
HOUSING	NOMINAL 4"W X 5"H X LENGTH PER PLANS EXTRUDED ALUMINUM HOUSING WITH
REFLECTOR	STEEL REFLECTOR WITH HIGH REFLECTANCE WHITE FINISH
SHIELDING	FLUSH ACRLYIC LENS
PERFORMANCE	625/LF NOMINAL DELIVERED LM; MIN 80 CRI
LAMP	INTEGRAL 3000K LED
INPUT WATTS	6.5W/LF (2FT= 13WATTS; 4FT= 26WATTS; 6FT= 39WATTS; 8FT = 52WATTS; 10FT= 65WATTS; 12FT= 78WATTS)
RUNNING GEAR	INTEGRAL 0-10V DIMMING DRIVER
MANUFACTURER	FOCAL POINT "SEEM 4 LED" #FSM4L-FL- 625LF -30K-1C-120/277-LD1-CEILING-ENSP-WH- LENGTH PER PLANS
ALTERNATE	APPROVED EQUAL BY NEORAY "DEFINE 4"; STARFIRE "VERSALUX"
LOCATION	GENERAL
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING SYSTEM FOR TEGULAR FITMENT.

TYPE "FA-1" RECESSED NOMINAL 4"W LINEAR LED SLOT

MOUNTING	RECESSED IN ACT CEILING WITH TEGULAR FITMENT
HOUSING	NOMINAL 4"W X 5"H X LENGTH PER PLANS EXTRUDED ALUMINUM HOUSING WITH
REFLECTOR	STEEL REFLECTOR WITH HIGH REFLECTANCE WHITE FINISH
SHIELDING	FLUSH ACRLYIC LENS
PERFORMANCE	875/LF NOMINAL DELIVERED LM; MIN 80 CRI
LAMP	INTEGRAL 3000K LED
INPUT WATTS	9.75W/LF (78 WATTS TOTAL PER 8FT)
RUNNING GEAR	INTEGRAL 0-10V DIMMING DRIVER
MANUFACTURER	FOCAL POINT "SEEM 4 LED" #FSM4L-FL-875LF-30K-1C-120/277-LD1-CEILING-ENSP-WH-LENGTH PER PLANS
ALTERNATE	APPROVED EQUAL BY NEORAY "DEFINE 4"; STARFIRE "VERSALUX"
LOCATION	PRIVATE OFFICE
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING SYSTEM FOR TEGULAR FITMENT.

TYPE "FB"	4" RECESSED ROUND LED DOWNLIGHT (flanged)
MOUNTING	RECESSED IN ACT CEILING
HOUSING	14"W X 15-1/4"L X 5-3/8"H STEEL HOUSING
REFLECTOR	SEMI-DEFFUSE REFLECTOR WITH WHITE OVERLAP FLANGE
SHIELDING	N/A
PERFORMANCE	MIN 1000 DELIVERED LM; MIN 85 CRI
LAMP	INTEGRAL 3000K LED
INPUT WATTS	14W MAX
RUNNING GEAR	INTEGRAL 0-10V DIMMING DRIVER
MANUFACTURER	ZUMTOBEL "BASYS LED II" #BR4DLED2-N-14W-830-W5-D1/2-BR4DLED2-N-W5-D /#BR4DLED2-N-W5-CL-W-SL-MOUNTING BARS AS REQUIRED
ALTERNATE	APPROVED EQUAL BY LIGHTOLIER, FOCAL POINT, EDISON PRICE
LOCATION	GENERAL
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING SYSTEM;

TYPE "FB/W"	4" RECESSED ROUND LED DOWNLIGHT-WET LOCATION
MOUNTING	RECESSED IN ACT CEILING
HOUSING	14"W X 15-1/4"L X 5-3/8"H STEEL HOUSING
REFLECTOR	SEMI-DEFFUSE REFLECTOR WITH WHITE OVERLAP FLANGE
SHIELDING	N/A
PERFORMANCE	MIN 1000 DELIVERED LM; MIN 85 CRI
LAMP	INTEGRAL 3000K LED
INPUT WATTS	14W MAX
RUNNING GEAR	INTEGRAL 0-10V DIMMING DRIVER
MANUFACTURER	ZUMTOBEL "BASYS LED II" #BR4DLED2-N-14W-830-W5-D1/2-BR4DLED2-N-W5-D /#BR4DLED2-N-W5-CL-W-SL-MOUNTING BARS AS REQUIRED
ALTERNATE	APPROVED EQUAL BY LIGHTOLIER, FOCAL POINT, EDISON PRICE
LOCATION	GENERAL
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING SYSTEM;

TYPE "FC" 4" RECESSED ROUND LED WALLWASHER (flanged)

MOUNTING	RECESSED IN ACT CEILING
HOUSING	14"W X 15-1/4"L X 5-3/8"H STEEL HOUSING
REFLECTOR	SEMI-DEFFUSE REFLECTOR WITH WHITE OVERLAP FLANGE
SHIELDING	N/A
PERFORMANCE	NOMINAL 800 LM; MIN 85 CRI
LAMP	INTEGRAL 3000K LED
INPUT WATTS	14W MAX
RUNNING GEAR	INTEGRAL 0-10V DRIVER
MANUFACTURER	ZUMTOBEL "BASYS LED II" #BR4WLED2-N-14W-830-D / #BR4WLED2-N-MT-W-MOUNTING BARS AS REQUIRED
ALTERNATE	APPROVED EQUAL BY LIGHTOLIER, FOCAL POINT, EDISON PRICE
LOCATION	GENERAL
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING SYSTEM;

<u>TYPE "FD"</u>	<i>LED UNDER CABINET STRIPLIGHT</i>
MOUNTING	SURFACE-MOUNTED CONTINUOUSLY UNDER CABINETS; HARDWIRED
HOUSING	NOMINAL 3.78"W X 0.96"H HOUSING WITH RUN LENGTH PER PLAN TO FILL UNDER CABINET LENGTH TO WITHIN 6" OF EACH END; STANDARD WHITE FINISH WITH INTEGRAL OCCUPANCY SENSOR
REFLECTOR	N/A
SHIELDING	FROSTED LENS
PERFORMANCE	N/A
LAMP	INTEGRAL LED; 3000K
INPUT WATTS	4 W/LF
RUNNING GEAR	INTEGRAL LED DRIVER
MANUFACTURER	STARFIRE "LED UNDER CABINET" #LUC-PER PLAN-830-W-1-LUC-OCW /WITH ACCESSORIES, AS REQUIRED FOR RUN LENGTHS PER RCP
ALTERNATE	APPROVED EQUAL BY PHILIPS DAY-BRITE "LINCS" OR BY COLOR KINETICS
LOCATION	GENERAL; FORENSICS LAB
REMARKS	E/E TO VERIFY VOLTAGE @ 120V; ARCHITECT TO VERIFY FINISH; GC TO COORDINATE MOUNTING WITH MILLWORK DETAILS; GC TO VERIFY EXACT RUN LENGTHS; FIXTURES TO RUN FOR FULL EXTENT OF UNDERCABINET SPACE; HOLD AT 6" AWAY FROM WALL AT EACH END; LED COLOR CONSISTENCY TO COMPLY WITH GENERAL SPECIFICATIONS

TYPE "FE" ***NOT USED***

TYPE "FF" ***TRACK-MOUNTED ADJUSTABLE TRACKHEAD (non-dimming)***

MOUNTING	MOUNTED TO TYPE "F/T" LOW-VOLTAGE TRACK
HOUSING	2.76" ROUND X 2.43" H DIE CAST ALUMINIUM HOUSING WITH STEM, 90 DEG X 90 DEG TILT AIMING AND 360 DEG. ROTATION WITH POWER COAT FINISH
REFLECTOR	ANODIZED ALUMINUM REFLECTOR
SHIELDING	FROSTED MEDIUM BEAM SPREAD. LENS
PERFORMANCE	825 LM; MIN 80 CRI
LAMP	LED (INTEGRAL); 3000K
INPUT WATTS	11W MAX
RUNNING GEAR	INTEGRAL LED DRIVER, AND POWERED BY TYPE "F/T" LOW-VOLTAGE TRACK
MANUFACTURER	LF ILLUMINATION "TRA10B-G-11L-8030-M-LD-1-FINISH
ALTERNATE	EQUAL BY AMERLUX, LOL/PHILIPS
LOCATION	N/A
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE FULL TYPE "F/T" SYSTEM INSTALLATION AND ALL REQUIRED COMPONENTRY

TYPE "FF/T" ***SURFACE MOUNTED CONTINUOUS LOW-VOLTAGE TRACK***

MOUNTING	SURFACE MOUNTED; RUN LENGTHS PER RCP
HOUSING	1.83" W X 0.813" H ALUMINIUM HOUSING PROFILE WITH LENGTHS PER PLAN
RUNNING GEAR	ONE CIRCUIT
MANUFACTURER	LF ILLUMINATION "GES204/208/212-ACCESSORIES AS REQUIRED FOR MOUNTING AND COMPLETE INSTALLTION"
ALTERNATE	EQUAL BY AMERLUX, LOL/PHILIPS
LOCATION	N/A
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE ALL MOUNTING ACCESSORIES WITH SCHEDULED ADJACENT CEILING SYSTEM; PROVIDE FACTORY GENERATED LAYOUT DRAWINGS WITH ALL REQUIRED SYSTEM COMPONENTS INDICATED FOR REVIEW AND APPROVAL; PROVIDE WITH PREFABRICATED CORNERS FOR SURFACE MOUNTED TRACK HOUSING, AS REQUIRED

TYPE "FG"	LED LINEAR STRIPLIGHT
MOUNTING	SURFACE OR CHAIN MOUNTING, PROVIDE AS REQUIRED
HOUSING	48"L X 2-1/2"W X 3"H STEEL HOUSING
REFLECTOR	N/A
SHIELDING	ACRYLIC LENS
PERFORMANCE	4000 DELIVERED LUMENS; 90 CRI MIN
LAMP	LED (INTEGRAL); 3500K
INPUT WATTS	44W
RUNNING GEAR	INTEGRAL 0-10V LED DIMMING DRIVER
MANUFACTURER	CREE #LS4-40L-35K-10V-120/277
ALTERNATE	APPROVED EQUAL BY LITHONIA, PHILIPS
LOCATION	BACK OF HOUSE
REMARKS	E/E TO VERIFY VOLTAGE; GC TO COORDINATE SURFACE OR CHAIN MOUNTING EXACT LOCATION TO BE COORDINATED WITH EQUIPMENT RACKS OR OTHER OBSTRUCTIONS AND PROVIDE ALL NECESSARY HARDWARE

TYPE "FH"	2X2 RECESSED LED DOWNLIGHT
MOUNTING	RECESSED IN ACT CEILING WITH TEGULAR FITMENT
HOUSING	NOMINAL 24"W X 4"H X 24"L EXTRUDED ALUMINUM HOUSING WITH 2" STEEL END CAPS
REFLECTOR	STEEL REFLECTOR WITH HIGH REFLECTANCE WHITE FINISH
SHIELDING	FROSTED WHITE ACRLYIC LENS.
PERFORMANCE	2500 LM; MIN 85 CRI; 45° WIDE FLOOD OPTICS
LAMP	LED (INTEGRAL); 3000K
INPUT WATTS	32W MAX
RUNNING GEAR	INTEGRAL 0-10V DIMMING DRIVER
MANUFACTURER	FOCAL POINT "EQUATION 2X2" #FEQ2-22-MG-2500L-30K-1C-UNV-LD1-GRID-WH
ALTERNATE	APPROVED EQUAL BY ZUMTOBEL, LEDALITESPEC
LOCATION	STORAGE, FACILITIES,
REMARKS	E/E TO VERIFY VOLTAGE; ARCHITECT TO VERIFY FINISH; GC TO COORDINATE MOUNTING

TYPE "FJ" RECESSED NOMINAL 2"W LINEAR LED SLOT-TRIMMED

MOUNTING	RECESSED IN SCHEDULED GRID CEILING
HOUSING	NOMINAL 3.5"W X 4.5"H X PER PLAN STEEL HOUSING
REFLECTOR	HIGH REFLECTANCE WHITE
SHIELDING	EXTRUDED WHITE ACRYLIC LENS FLUSH SNAP IN LENS
PERFORMANCE	3000K COLOR TEMPERATURE; 625 NOMINAL LUMENS/FT; 80 CRI MIN
LAMP	3000K INTEGRAL LED
INPUT WATTS	8.25W/LF
RUNNING GEAR	INTEGRAL 0-10V DIMMABLE DRIVER
MANUFACTURER	FOCAL POINT #FSM2L-FL-625-30K-1C-UNV-LD-GC TO COORDINATE-WH-LENGTHS PER PLANS
ALTERNATE	APPROVED EQUAL BY NEORAY; STARFIRE
LOCATION	PANTRY AND COFFEE STATIONS
REMARKS	E/E TO VERIFY VOLTAGE; ARCHITECT TO VERIFY FINISH; GC TO COORDINATE MOUNTING AND ACCESSORIES

TYPE "FJ-1" RECESSED NOMINAL 2"W LINEAR LED SLOT-TRIMLESS

MOUNTING	RECESSED TRIMLESS IN SCHEDULED GWB CEILING
HOUSING	NOMINAL 3.5"W X 4.5"H X PER PLAN STEEL HOUSING
REFLECTOR	HIGH REFLECTANCE WHITE
SHIELDING	EXTRUDED WHITE ACRYLIC LENS FLUSH SNAP IN LENS
PERFORMANCE	3000K COLOR TEMPERATURE; 625 NOMINAL LUMENS/FT; 80 CRI MIN
LAMP	3000K INTEGRAL LED
INPUT WATTS	8.25W/LF
RUNNING GEAR	INTEGRAL 0-10V DIMMABLE DRIVER
MANUFACTURER	FOCAL POINT #FSM2L-FL-625-30K-1C-UNV-LD-GC TO COORDINATE-WH-LENGTHS PER PLANS
ALTERNATE	APPROVED EQUAL BY NEORAY; STARFIRE
LOCATION	PANTRY AND COFFEE STATIONS
REMARKS	E/E TO VERIFY VOLTAGE; ARCHITECT TO VERIFY FINISH; GC TO COORDINATE MOUNTING AND ACCESSORIES

TYPE "FK" LED SYMMETRICAL LENSED COVELIGHT

MOUNTING	SURFACE MOUNTED IN ARCHITECTURAL COVE IN CONTINUOUS RUNS; REFER TO ARCHITECTURAL DETAILS.
HOUSING	NOMINAL 2.25"W X 1.25"H X LENGTH PER PLAN
REFLECTOR	N/A
SHIELDING	EXTRUDED MILKY LENS
PERFORMANCE	3000K; 82 CRI; 1054 DELIVERED LUMENS;
LAMP	3000K INTEGRAL LED
INPUT WATTS	10W
RUNNING GEAR	0-10V DIMMABLE DRIVER
MANUFACTURER	I2SYSTEMS "ICOVE SYMMETRICAL" #CS-LENGTH PER PLAN-30K-08W
ALTERNATE	TBD
LOCATION	RESTROOM
REMARKS	E/E TO VERIFY VOLTAGE; CONTRACTOR TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED PER ARCHITECTURAL DETAILS

4.02 "K" SERIES –ELEVATOR LOBBY FIXTURES

TYPE "KC/CONT" CONTINUOUS COVE LIGHT

MOUNTING	SURFACE MOUNTED AS PER ARCHITECTURAL DETAILS
HOUSING	NOMINAL 3.5"W X 7"H X LENGTHS PER PLANS
REFLECTOR	20GA CRS FINISH; BAKED WHITE ENAMEL WITH 90% REFLECTIVITY
SHIELDING	EXTRUDED ACRYLIC LENS
PERFORMANCE	3000K COLOR TEMPERATURE; 471 LUMENS/FT
LAMP	INTEGRAL 3000K LED
INPUT WATTS	7.5/LF
RUNNING GEAR	INTEGRAL 0-10V DIMMABLE DRIVER
MANUFACTURER	NATIONAL LIGHTING "SUFFUSE LED" #SUFFUSE LED-LO-LENGTHS PER PLANS-3000K-F-UNV-DIM0-10
ALTERNATE	NA
LOCATION	ELEVATOR LOBBIES
REMARKS	E/E TO VERIFY VOLTAGE; CONTRACTOR TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED PER ARCHITECTURAL DETAILS

TYPE "KK" PENDANT

MOUNTING	TBD- MOUNTING HEIGHT VIF BY ARCHITECT
HOUSING	NOMINAL 18"DIA X 4.5"H
REFLECTOR	NA
SHIELDING	FLAT WHITE ACRYLIC LENS
PERFORMANCE	3000K COLOR TEMPERATURE; NOMINAL 1650 LUMENS;
LAMP	INTEGRAL 3000K LED
INPUT WATTS	33 WATTS
RUNNING GEAR	INTEGRAL 0-10V DIMMABLE DRIVER
MANUFACTURER	PRULITE "P3900" #P3918-LED3-MO-FWA-Y-D1-SC-UNV-MPCA-X3-DM10
ALTERNATE	NA
LOCATION	ELEVATOR LOBBIES
REMARKS	E/E TO VERIFY VOLTAGE; CONTRACTOR TO COORDINATE ALL MOUNTING ACCESSORIES WITH APPROVED ADJACENT CEILING. MOUNTING HEIGHTS V.I.F. BY ARCHITECT

TYPE "KO" ELEVATOR CALL LIGHT

MOUNTING	SURFACE MOUNTED TO ELEVATOR HEADER AT ENTRY AS PER ARCHITECTURAL DETAIL
HOUSING	NOMINAL 1.5"W X 1.5"H X LENGTHS PER PLANS
REFLECTOR	NA
SHIELDING	EXTRUDED ACRYLIC LENS
PERFORMANCE	2 STAGE - CALL LIGHT OPERATES ON 1 CIRCUIT WIHE OUTPUT AND 2 ND CIRCUIT RED
LAMP	CIRCUIT 1: 3000K INTEGRAL LED CIRCUIT 2: RED INTEGRAL LED
INPUT WATTS	ALLOW FOR 4 WATTS. (1.5 WATTS PER CIRCUIT)
RUNNING GEAR	(2) REMOTE DRIVERS IN ADJACENT CODE APPROVED ENCLOSURE FOR (2) CIRCUIT OPERATION
MANUFACTURER	ACOLYTE #CH-WH35-M-VOLTAGE BY EE/ RB-IP20-VOLTAGE BY EE-1.5-R/ RB-B-B-VOLTAGE BY EE-1.5-3000K
ALTERNATE	NA
LOCATION	ELEVATOR ENTRIES
REMARKS	VOLTAGE BY EE; G.C. TO COORDINATE ALL NECESSARY MOUNTING REQUIREMENTS WITH MANUFACTURER FOR COMPLETE INSTALLATION; GC TO CONFIRM ANY/ALL INTERFACES NECESSARY FOR ELEVATOR CONTROL GEAR TO ACTIVATE SPECIFIED FIXTURES AND MAKE ALL PROVISIONS FOR COMPLETE, OPERABLE, AND CODE COMPLIANT INSTALLATION AT ARRIVAL CIRCUIT 1 (3000K) ILLUMINATES; FOR ELEVATOR GOING DOWN CIRCUIT 2 (RED) ILLUMINATES MANUFACTURER TO PROVIDE MOCKUP FOR REVIEW AND APPROVAL.

4.03 LIGHTING FIXTURE CUTS AND DETAILS

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HDLC

April 28, 2017
Issued for 90% CD

NYS OAG
28 Liberty NY, NY

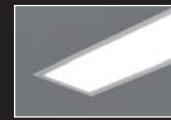
END OF SECTION

ARCHITECTURAL LIGHTING FIXTURES

26 51 00-33



trimless mud-in



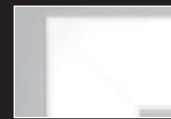
trim flange



grid



end detail



corner detail



regress lens



wall to ceiling companion



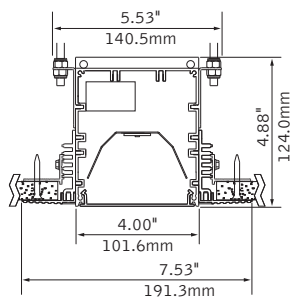
perimeter companion



suspended companion

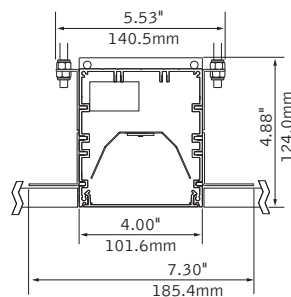
DIMENSIONAL DATA

trimless mud-in



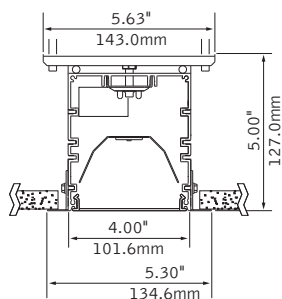
note: 0.375"min - 2.125"max ceiling thickness

hard surface

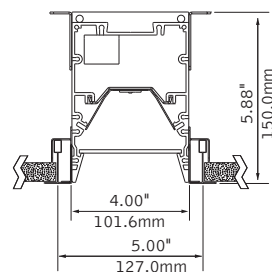


note: 0.375"min - 2.125"max ceiling thickness

trim flange



grid - regress lens shown



FEATURES

Narrow extruded aluminum 4" aperture recessed slot LED.

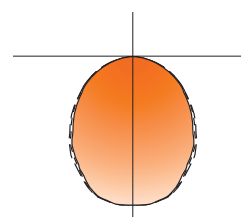
Integrates with ceiling or wall in a variety of mounting styles for a clean, unobtrusive aesthetic.

Individual units and continuous runs in 1" increments.

Frosted acrylic lens provides uninterrupted illumination, without pixels or shadows.

LED position and lens material optimized to provide the perfect blend of high performance and visual comfort.

PERFORMANCE



4' Flush Lens
Nominal output:
375 Lumens per foot
Delivered Lumens: 1500lm
Total System Watts: 15W

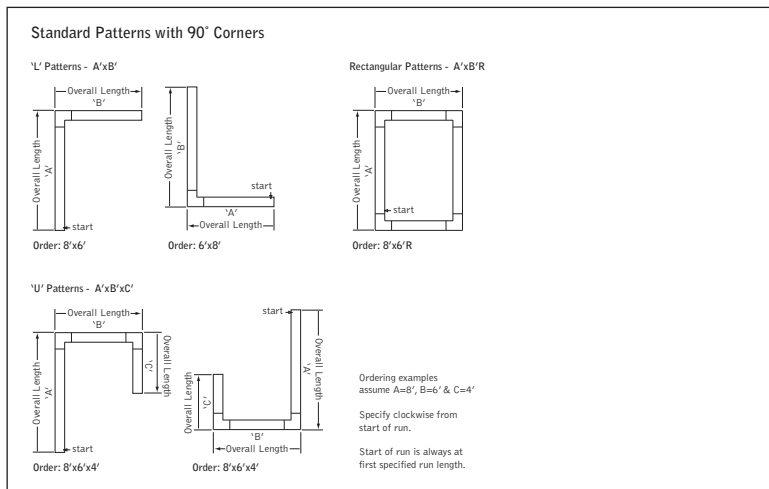
PRODUCT OVERVIEW

Lumen Output: 1500-4000lm
Wattage: 15-46W
LPW: 77-103
SDCM: 3
Reported Lumen L70 @
Maintenance: >60,000hrs



Photometric performance is measured in accordance with IESNA LM-79. Visit focalpointlights.com for complete photometric data. Visit designlights.org/QPL for model specifics.

DETAILS



SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. LEDs are placed to promote a uniform appearance. Available in 3000K, 3500K or 4000K with CRI>80, 3SDCM. LED modules and drivers are replaceable from below.

Construction

One piece extruded aluminum housing. 20 Ga. steel end caps. Housing for new construction applications. XFW acceptable for use with wood, consult factory for Type IC availability. 2' unit weight: 18 lbs., 3' unit weight: 24 lbs., 4' unit weight: 30 lbs., 5' unit weight: 36 lbs.

Optic

Reflectors fabricated of 22 Ga. steel finished in High Reflectance White powder coat. Extruded acrylic lens .085" thick with satin finish, up to 8' continuous.

Electrical

Luminaires are pre-wired with factory installed branch circuit wiring and over-molded quick connects. Standard 120-277V constant current driver includes 0-10V analog dimming. Dimming range 100% to 10%. Power factor >.9.

Emergency Battery

Bodine BSL310-CAN. Emergency output - 10 watts for 90 minutes.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a multi-stage pre-treatment.

Lumen Maintenance

Calculated: L70 at 118,000 hours Reported: L70 at >60,000 hours
Derived from EPA TM-21 calculator based on 10,000 hours of test data.

Reliability

At Focal Point, our products are designed to stand the test of time. Each luminaire is engineered using superior components, manufactured with the utmost care and rigorously tested. Contact us for reliability data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

4' PERFORMANCE CHART

Shielding	Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
Flush Lens	375LF	1500	15	97
	625LF	2500	26	95
	875LF	3500	39	89
	1000LF	4000	46	86
Regress Lens	375LF	1500	15	86
	625LF	2500	26	84
	875LF	3500	39	80
	1000LF	4000	46	77
Regress High Performance	375LF	1500	15	103
	625LF	2500	26	100
	875LF	3500	39	95
	1000LF	4000	46	91

*Based on 3500k, 4' lengths. *Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%

Seem 4 LED	FSM4L	
Shielding		
Flush Satin Lens	FL	
Regress Lens	SR	
Regress High Performance Lens (Ceiling applications only)		
275 Lumens per foot	275LF	
<small>(Not available with Lutron Drivers.)</small>		
375 Lumens per foot	375LF	
<small>(Not available with LU5 & LH1 Drivers)</small>		
625 Lumens per foot	625LF	
<small>(FL & SR 3' minimum with LU5 & LH1 Drivers. SRXP 4' minimum with LU5 & LH1 Drivers.)</small>		
875 Lumens per foot	875LF	
<small>(SR & SRXP 3' minimum with LU5 & LH1 Drivers)</small>		
1000 Lumens per foot	1000LF	
<small>(Not available with L3D driver)</small>		
Color Temperature		
3000K	30K	
3500K	35K	
4000K	40K	
Circuit		
Single Circuit	1C	1C
Voltage		
120 Volt	120	
277 Volt	277	
UNV Volt UNV		
<small>(Cannot be specified with EM option)</small>		
Driver		
<small>(See driver reference for driver quantities)</small>		
0-10V - 10% Dimming	LD1	
0-10V - 1% Dimming	L11	
Lutron A-Series	L3D	
1% EcoSystem Digital		
<small>(Consult factory for 3-wire control)</small>		
Lutron H-Series 1% Dimming	LH1	
Lutron 5-Series	LU5	
5% EcoSystem Digital		
DALI 1% Dimming	D11	
Ceiling Configuration		
Std. 15/16" Lay-in	G1	
Std. 15/16" Tegular	T1	
Std. 9/16" Lay-in	G2	
Std. 9/16" Tegular	T2	
9/16" Slot-tee Tegular	G3	
Tall 15/16" Lay-in	G4	
Tall 15/16" Tegular	T4	
Tall 9/16" Lay-in	G5	
Tall 9/16" Tegular	T5	
Node 9/16" Tegular	T6	
Trim Flange Drywall	TF	
<small>(3' minimum with Lutron Drivers)</small>		
Trim Flange Wood	TFW	
<small>(3' minimum with Lutron Drivers)</small>		
Mud-in Trimless,	XF1	
pre-set for 1/2" Drywall		
Mud-in Trimless,	XF2	
pre-set for 5/8" Drywall		
Mud-in Trimless,	XFF	
set thickness in field		
<small>(Mounting equipment assembled in field)</small>		
Non-Drywall Hard Surface	XFN	
Hard Surface, Wood	XFW	
Factory Options		
Chicago Plenum	CP	
Emergency Circuit*	EC	
Emergency Battery Pack*	EM	
<small>(4' lengths or longer, not available at corners)</small>		
6' New York City Flex Whip	FNY	
6' Flex Whip	FW	
Finish		
Matte White Housing	WH	WH
Luminaire Length		
<small>(Leave blank for patterns. Lengths are nominal. 2' minimum length.)</small>		
Specify luminaire/row length in 1" increments	X'	
<small>(Smaller increments available, consult factory.)</small>		
Pattern Options		
<small>(3' minimum length)</small>		
'L' pattern	A' x B'	
'U' pattern	A' x B' x C'	
Rectangular pattern	A' x B'R	
<small>(Consult factory for other pattern options)</small>		

GC TO COORDINATE →

← **LENGTH PER PLAN**



Seem® 4

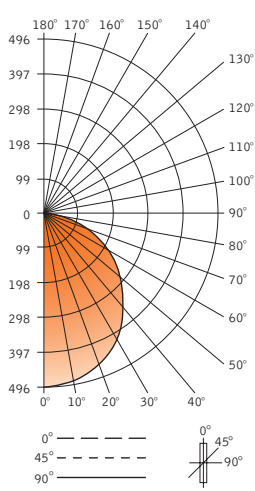
LED - FLUSH LENS

FSM4L-FL-375LF-35K-1C-UNV-LD1-G1-CP-WH-4'

Filename: FSM4LFL375LF35K.IES
Test #: 11499493.01

Lumens: 1423lm
System Watts: 15W
LPW: 95

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle				
	0°	22.5°	45°	67.5°	90°
0°	496	496	496	496	496
5°	493	496	493	493	494
15°	475	479	475	476	477
25°	439	443	439	440	440
35°	386	390	387	387	388
45°	322	325	322	323	324
55°	253	255	253	254	254
65°	176	179	178	179	180
75°	100	102	102	104	104
85°	31	32	31	31	31
90°	0	2	2	2	2
95°	0	0	0	0	0
105°	0	0	0	0	0
115°	0	0	0	0	0
125°	0	0	0	0	0
135°	0	0	0	0	0
145°	0	0	0	0	0
155°	0	0	0	0	0
165°	0	0	0	0	0
175°	0	0	0	0	0
180°	0	0	0	0	0

LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	384	27.0
0-40°	627	44.1
0-60°	1103	77.5
0-90°	1423	100.00
Total Luminaire 0-180°	1423	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	3757	3760	3774
55°	3634	3642	3657
65°	3441	3473	3506
75°	3193	3261	3313
85°	2923	2967	2970

Go to www.focalpointlights.com for additional photometric data.

Seem® 4

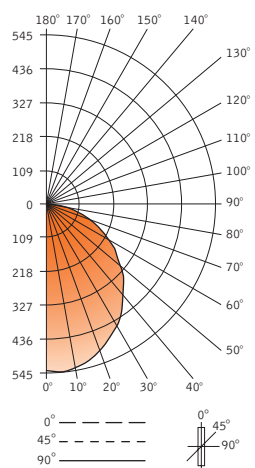
LED - REGRESS LENS

FSM4L-SR-375LF-35K-LD1-1C-120-G1-WH

Filename: FSM4LSR375LF35K.IES
Test #: 17847.0

Lumens: 1333lm
System Watts: 15W
LPW: 89

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle					Zonal Lumens
	0°	22.5°	45°	67.5°	90°	
0°	540	540	540	540	540	
5°	545	545	544	545	545	52
15°	520	519	519	519	519	146
25°	469	467	465	465	463	216
35°	418	418	413	402	396	254
45°	343	339	322	305	300	248
55°	261	254	228	209	202	207
65°	178	163	136	119	111	140
75°	88	72	49	34	30	60
85°	22	6	6	6	6	11
90°	0	0	0	0	0	0
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

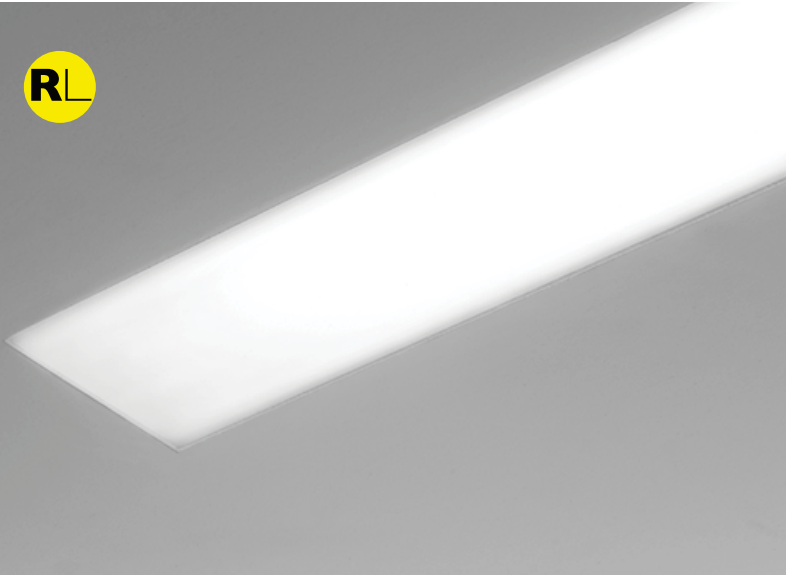
LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	414	31.0
0-40°	668	50.1
0-60°	1122	84.2
0-90°	1333	100.0
Total Luminaire 0-180°	1333	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	4723	4439	4130
55°	4436	3872	3430
65°	4096	3145	2565
75°	3310	1858	1115
85°	2407	702	702

Go to www.focalpointlights.com for additional photometric data.



trimless mud-in



trim flange



grid



end detail



corner detail



regress lens



wall to ceiling companion



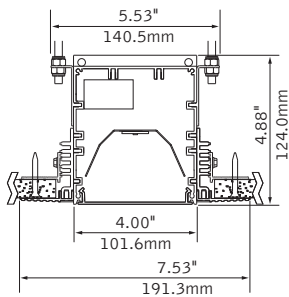
perimeter companion



suspended companion

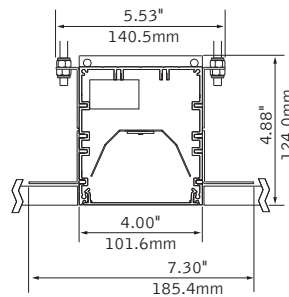
DIMENSIONAL DATA

trimless mud-in



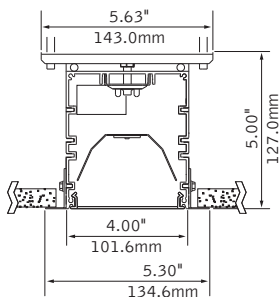
note: 0.375"min - 2.125"max ceiling thickness

hard surface

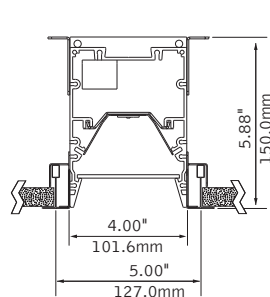


note: 0.375"min - 2.125"max ceiling thickness

trim flange



grid - regress lens shown



FEATURES

Narrow extruded aluminum 4" aperture recessed slot LED.

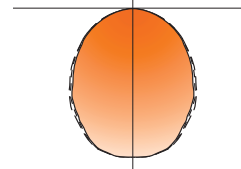
Integrates with ceiling or wall in a variety of mounting styles for a clean, unobtrusive aesthetic.

Individual units and continuous runs in 1" increments.

Frosted acrylic lens provides uninterrupted illumination, without pixels or shadows.

LED position and lens material optimized to provide the perfect blend of high performance and visual comfort.

PERFORMANCE



4' Flush Lens
Nominal output:
375 Lumens per foot

Delivered Lumens: 1500lm
Total System Watts: 15W

PRODUCT OVERVIEW

Lumen Output: 1500-4000lm
Wattage: 15-46W
LPW: 77-103
SDCM: 3
Reported Lumen L70 @
Maintenance: >60,000hrs

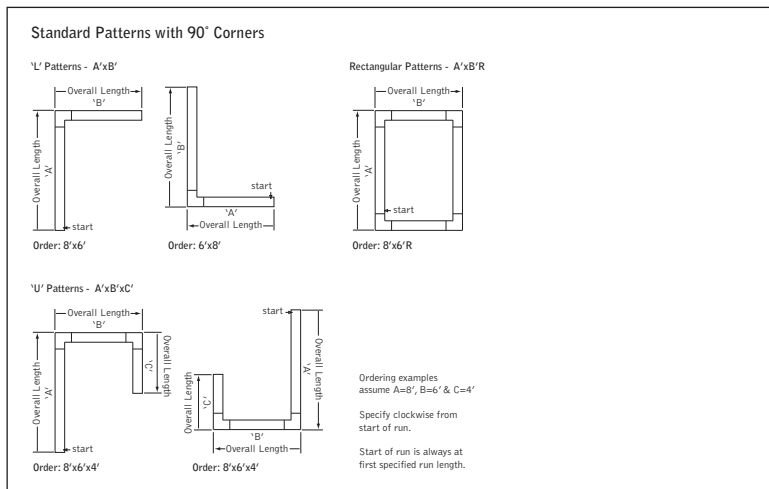


Photometric performance is measured in accordance with IESNA LM-79. Visit focalpointlights.com for complete photometric data. Visit designlights.org/QPL for model specifics.

TYPE FA-1

FSM4L

DETAILS



SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. LEDs are placed to promote a uniform appearance. Available in 3000K, 3500K or 4000K with CRI>80, 3SDCM. LED modules and drivers are replaceable from below.

Construction

One piece extruded aluminum housing. 20 Ga. steel end caps. Housing for new construction applications. XFW acceptable for use with wood, consult factory for Type IC availability. 2' unit weight: 18 lbs., 3' unit weight: 24 lbs., 4' unit weight: 30 lbs., 5' unit weight: 36 lbs.

Optic

Reflectors fabricated of 22 Ga. steel finished in High Reflectance White powder coat. Extruded acrylic lens .085" thick with satin finish, up to 8' continuous.

Electrical

Luminaires are pre-wired with factory installed branch circuit wiring and over-molded quick connects. Standard 120-277V constant current driver includes 0-10V analog dimming. Dimming range 100% to 10%. Power factor >.9.

Emergency Battery

Bodine BSL310-CAN. Emergency output - 10 watts for 90 minutes.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a multi-stage pre-treatment.

Lumen Maintenance

Calculated: L70 at 118,000 hours Reported: L70 at >60,000 hours
Derived from EPA TM-21 calculator based on 10,000 hours of test data.

Reliability

At Focal Point, our products are designed to stand the test of time. Each luminaire is engineered using superior components, manufactured with the utmost care and rigorously tested. Contact us for reliability data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

4' PERFORMANCE CHART

Shielding	Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
Flush Lens	375LF	1500	15	97
	625LF	2500	26	95
	875LF	3500	39	89
	1000LF	4000	46	86
Regress Lens	375LF	1500	15	86
	625LF	2500	26	84
	875LF	3500	39	80
	1000LF	4000	46	77
Regress High Performance	375LF	1500	15	103
	625LF	2500	26	100
	875LF	3500	39	95
	1000LF	4000	46	91

*Based on 3500k, 4' lengths. *Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%

Seem 4 LED	FSM4L	
Shielding		
Flush Satin Lens	FL	
Regress Lens	SR	
Regress High Performance Lens (Ceiling applications only)		
SRXP	SRXP	
Lumen Output		
275 Lumens per foot	275LF	
(Not available with Lutron Drivers.)		
375 Lumens per foot	375LF	
(Not available with LU5 & LH1 Drivers)		
625 Lumens per foot	625LF	
(FL & SR 3' minimum with LU5 & LH1 Drivers. SRXP 4' minimum with LU5 & LH1 Drivers.)		
875 Lumens per foot	875LF	
(SR & SRXP 3' minimum with LU5 & LH1 Drivers)		
1000 Lumens per foot	1000LF	
(Not available with L3D driver)		
Color Temperature		
3000K	30K	
3500K	35K	
4000K	40K	
Circuit		
Single Circuit	1C	1C
Voltage		
120 Volt	120	
277 Volt	277	
UNV Volt UNV (Cannot be specified with EM option)		
Driver (See driver reference for driver quantities)		
0-10V - 10% Dimming	LD1	
0-10V - 1% Dimming	L11	
Lutron A-Series	L3D	
1% EcoSystem Digital (Consult factory for 3-wire control)		
Lutron H-Series 1% Dimming	LH1	
Lutron 5-Series	LU5	
5% EcoSystem Digital		
DALI 1% Dimming	D11	
Ceiling Configuration		
Std. 15/16" Lay-in	G1	
Std. 15/16" Tegular	T1	
Std. 9/16" Lay-in	G2	
Std. 9/16" Tegular	T2	
9/16" Slot-tee Tegular	G3	
Tall 15/16" Lay-in	G4	
Tall 15/16" Tegular	T4	
Tall 9/16" Lay-in	G5	
Tall 9/16" Tegular	T5	
Node 9/16" Tegular	T6	
Trim Flange Drywall (3' minimum with Lutron Drivers)	TF	
Trim Flange Wood (3' minimum with Lutron Drivers)	TFW	
Mud-in Trimless,	XF1	
pre-set for 1/2" Drywall		
Mud-in Trimless,	XF2	
pre-set for 5/8" Drywall		
Mud-in Trimless,	XFF	
set thickness in field (Mounting equipment assembled in field)		
Non-Drywall Hard Surface	XFN	
Hard Surface, Wood	XFW	
Factory Options		
Chicago Plenum	CP	
Emergency Circuit*	EC	
Emergency Battery Pack*	EM	
(4' lengths or longer, not available at corners)		
6' New York City Flex Whip	FNY	
6' Flex Whip	FW	
Finish		
Matte White Housing	WH	WH
Luminaire Length (Leave blank for patterns. Lengths are nominal. 2' minimum length.)		
Specify luminaire/row length in 1" increments (Smaller increments available, consult factory.)	X'	LENGTH PER PLAN
Pattern Options (3' minimum length)		
'L' pattern	A' x B'	
'U' pattern	A' x B' x C'	
Rectangular pattern (Consult factory for other pattern options)	A' x B'R	



Seem® 4

LED - FLUSH LENS

FSM4L-FL-375LF-35K-1C-UNV-LD1-G1-CP-WH-4'

Filename: FSM4LFL375LF35K.IES

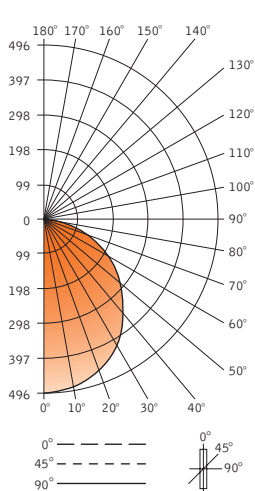
Test #: 11499493.01

Lumens: 1423lm

System Watts: 15W

LPW: 95

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle				
	0°	22.5°	45°	67.5°	90°
0°	496	496	496	496	496
5°	493	496	493	493	494
15°	475	479	475	476	477
25°	439	443	439	440	440
35°	386	390	387	387	388
45°	322	325	322	323	324
55°	253	255	253	254	254
65°	176	179	178	179	180
75°	100	102	102	104	104
85°	31	32	31	31	31
90°	0	2	2	2	2
95°	0	0	0	0	0
105°	0	0	0	0	0
115°	0	0	0	0	0
125°	0	0	0	0	0
135°	0	0	0	0	0
145°	0	0	0	0	0
155°	0	0	0	0	0
165°	0	0	0	0	0
175°	0	0	0	0	0
180°	0	0	0	0	0

LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	384	27.0
0-40°	627	44.1
0-60°	1103	77.5
0-90°	1423	100.00
Total Luminaire 0-180°	1423	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	3757	3760	3774
55°	3634	3642	3657
65°	3441	3473	3506
75°	3193	3261	3313
85°	2923	2967	2970

Go to www.focalpointlights.com for additional photometric data.

Seem® 4

LED - REGRESS LENS

FSM4L-SR-375LF-35K-LD1-1C-120-G1-WH

Filename: FSM4LSR375LF35K.IES

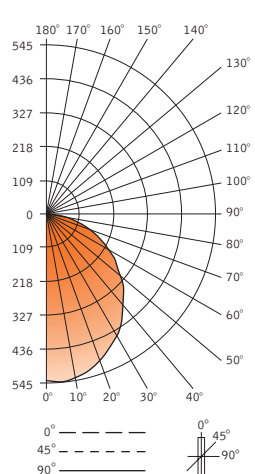
Test #: 17847.0

Lumens: 1333lm

System Watts: 15W

LPW: 89

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle					Zonal Lumens
	0°	22.5°	45°	67.5°	90°	
0°	540	540	540	540	540	
5°	545	545	544	545	545	52
15°	520	519	519	519	519	146
25°	469	467	465	465	463	216
35°	418	418	413	402	396	254
45°	343	339	322	305	300	248
55°	261	254	228	209	202	207
65°	178	163	136	119	111	140
75°	88	72	49	34	30	60
85°	22	6	6	6	6	11
90°	0	0	0	0	0	0
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	414	31.0
0-40°	668	50.1
0-60°	1122	84.2
0-90°	1333	100.0
Total Luminaire 0-180°	1333	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	4723	4439	4130
55°	4436	3872	3430
65°	4096	3145	2565
75°	3310	1858	1115
85°	2407	702	702

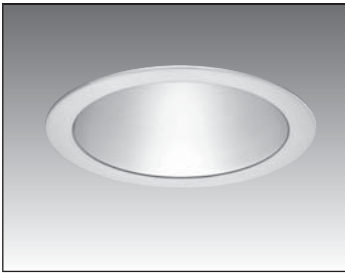
Go to www.focalpointlights.com for additional photometric data.

Recessed Round Downlight

4"

online Find it Fast

1120



BASYS™ LED II

Applications: The BASYS LED II family offers a broad range of distributions, outputs and finishes. Whether you are looking to achieve high light levels or a sleek, minimalist appearance, BASYS LED II has an option to meet your lighting challenges. Perfect for offices, foyers, hallways, conference rooms or educational areas.

Type: _____

Project: _____

LED IBEW Union Made



BASYS LED II HOUSING

BR4D LED2						
FIXTURE	TRIM/CEILING TYPE	WATTAGE/OUTPUT	LED MODULE	DISTRIBUTION	DRIVER	OPTIONS
BASYS LED II Round 4" Recessed Downlight Direct White LED CRI = 85 typical	N Standard Flange	14W 1000 lm	827 2700K, 85 typical CRI	M4 Medium Distribution, 45° cutoff	D_* Standard 0-10V Dimming Driver, 10%	CP Chicago Plenum
	F Flangeless T* TechZone, 6" wide grid *NOTE: Unit is NOT designed be used in a 6"x6" square	22W 1400 lm 30W 2100 lm <i>For exact Lumen Output and Wattage consumption data, please consult LM-79 reports.</i>	830 3000K, 85 typical CRI 835 3500K, 85 typical CRI 840 4000K, 85 typical CRI 3.5-step MacAdam	M5 Medium Distribution, 55° cutoff W5 Wide Distribution, 55° cutoff	DH_* Lutron HiLume A Series, 1% DD_* DALI Dimming, 1% *Specify "1" for 120V or "2" for 277V.	EM_* Standby Battery Pack, 5W, 290lm F Fusing * Specify "1" for 120V or "2" for 277V. * EM not available in TECHZONE ceiling installations.
		Trim Finish Multiplier for Lumen Output Clear Specular 1.10 Clear Semi-Specular 1.00 Matte 0.87 White Matte 0.80	CCT Multiplier for Lumen Output 2700K 0.87 3000K 0.93 3500K 1.00			

BASYS LED II TRIM

BR4D LED2					
FIXTURE	TRIM/CEILING TYPE	DISTRIBUTION	REFLECTOR FINISH	FLANGE FINISH	LENS
BASYS LED II Round 4" Recessed Downlight	N Standard Flange	M4 Medium Distribution, 45° cutoff	CL Clear Specular	N Natural	SL Solite Lens
	F Flangeless T* TechZone, 6"	M5 Medium Distribution, 55° cutoff W5 Wide Distribution, 55° cutoff	CS Clear Semi-Specular MT Matte WH White Matte CC* Custom * For Custom Colors, please specify RAL # _____	W White C* Custom F Flangeless	SB Sandblasted Lens CA Clear Tempered Glass Lens Solite Lens is standard.

BASYS LED II MOUNTING

OPTIONS	
9930	Set of two 27" C-Channel mounting bars
9952	Set of two 52" C-Channel mounting bars
9956	Set of two 28" 10 ga. one-piece universal mounting bars

GC TO COORDINATE



IBEW Union Made

Rated for Wet Locations

1) Housing - Enclosed housing is of 20-gauge galvanized steel. Shallow integral heat sink rests on top of the housing. 20-gauge aluminum plaster frame has a fixed throat of 1 3/8" to accommodate double-thickness plasterboard.

Thru Wire Box Oversized junction box is 16-gauge galvanized steel.

CSA listed for thru wiring (4 in and 4 out at 90°C) and has 7/8" and 1 1/8" knockouts. Basys 4" Tech Zone units may be daisy chained together, however they are not labeled for Through Branch Circuit Wiring.

Driver door provides access to driver and thru wire box through fixture aperture.

2) Wattage & CCT - Wattage options are 14W, 22W, or 30W. Available in 2700K, 3000K, 3500K, or 4000K color temperatures for 85 CRI. 3.5-step MacAdam.

3) Dimming - Basys LED II is available with 0-10V Dimming driver standard, with 10% dimming. 1% dimming is available with the Lutron HiLume A series. 1% dimming is available with a DALI driver. For non-dimming installations, the standard 0-10V dimming driver will be provided, and the dimming control wires can simply be capped off at installation.

Compatible 0-10V Dimmers:

- Lutron DDTV
- Lutron NTFTV
- LEVITON IP710-DLZ
- Wattstopper/Legrand ADF-120277
- Osram 45561 - LC-SL3W-TVWBX/UNV

4) Driver - The driver can be removed either through the aperture or back of thru wire box for replacement and ease of wire connection.

Standard Quick Disconnect for driver module allows driver to be removed completely from housing without tools. It offers quick connection to building power supply.

5) Standby Battery Pack - 5W, 290lm

6) Mounting - Rigid mounting brackets provide 3" vertical adjustment from inside aperture and plenum side of housing. Brackets accommodate One-Piece Universal Mounting Bar (mounting bars ordered as an optional accessory).

7) Reflectors - Upper Reflector - Reflector made of high reflectance hydro formed plastic, designed to provide highest efficiency and effective beam distribution. The lens obscures direct view of the LEDs.

Lower Reflector - Compound parabolic curve of the lower reflector provides optical and physical cutoff with two options: 45° and 55°.

Lower Reflector Finishes:

Clear Specular - highly polished post-anodized finish with dark light appearance. Precise light distribution and glare limitation provides highest lumen output.

Clear Semi-Specular - architectural visual identity is provided while maintaining precise directionality of light.

Matte - soft, diffuse, evenly illuminated surface provides a congruous appearance between the downlight and the ceiling.

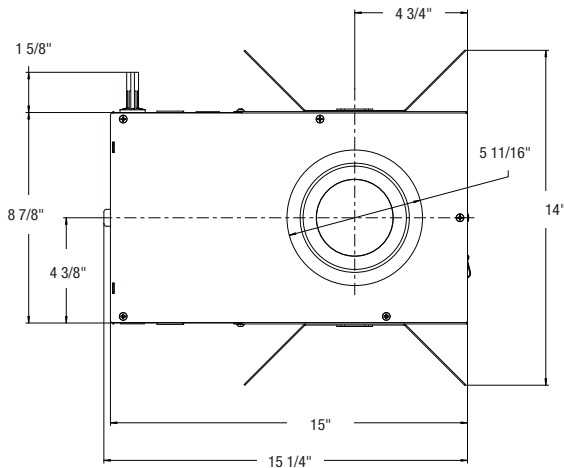
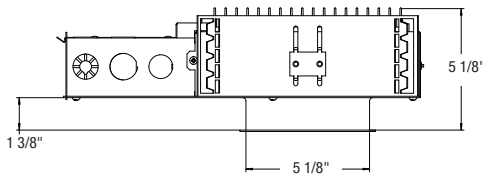
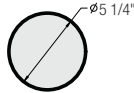
White - Zumtobel White painted finish blends well with typical White painted ceilings.

8) Life - 50,000 hours rated life. L70.

9) Weight - 4" STD = 9 lbs.
4" EM = 11 lbs.

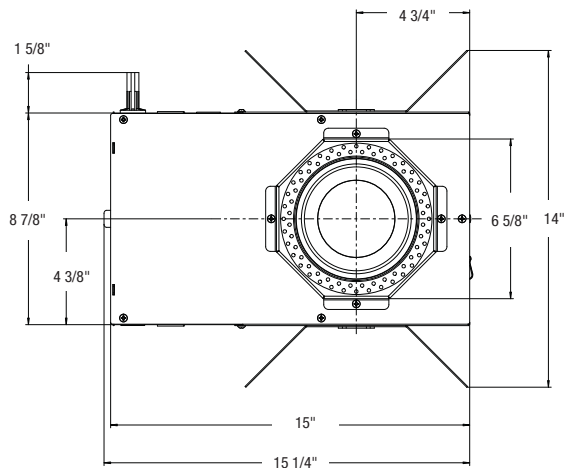
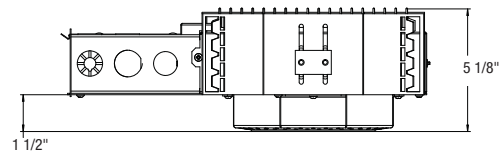
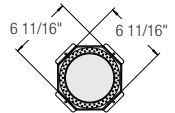
FLANGED VIEWS - 55° CUTOFF

Ceiling Cutout
5 1/4" Diameter



FLANGELESS VIEWS - 55° CUTOFF

Octagon Ceiling Cutout
6 11/16" across flats

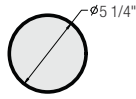


TYPE FB

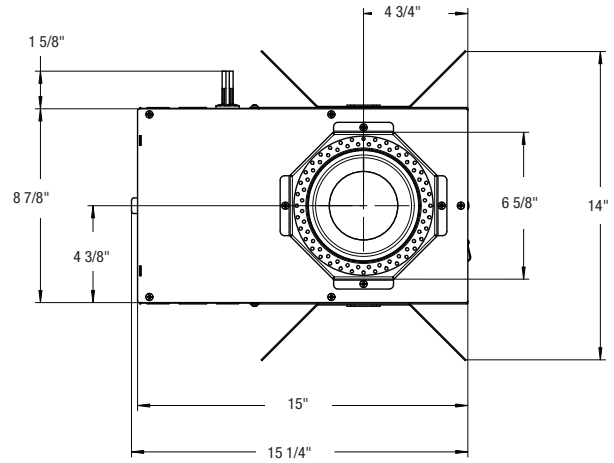
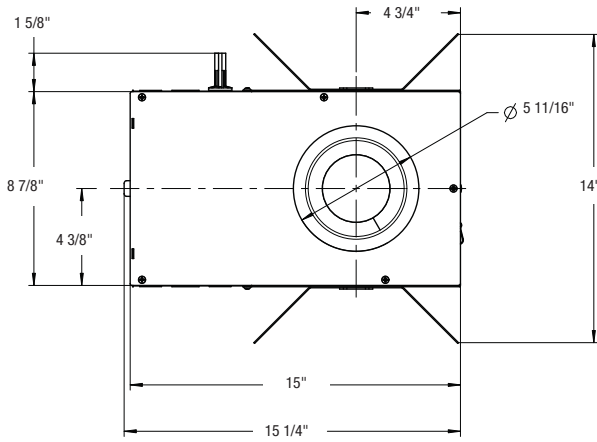
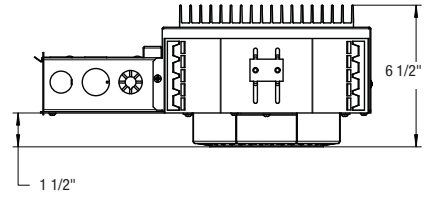
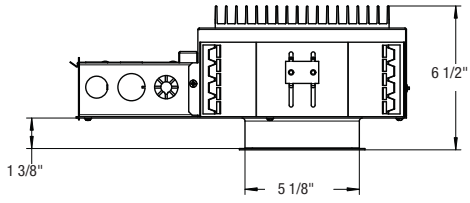
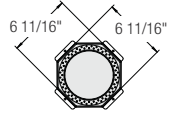
FLANGED VIEWS – 45° CUTOFF

FLANGELESS VIEWS – 45° CUT

Ceiling Cutout
5 1/4" Diameter

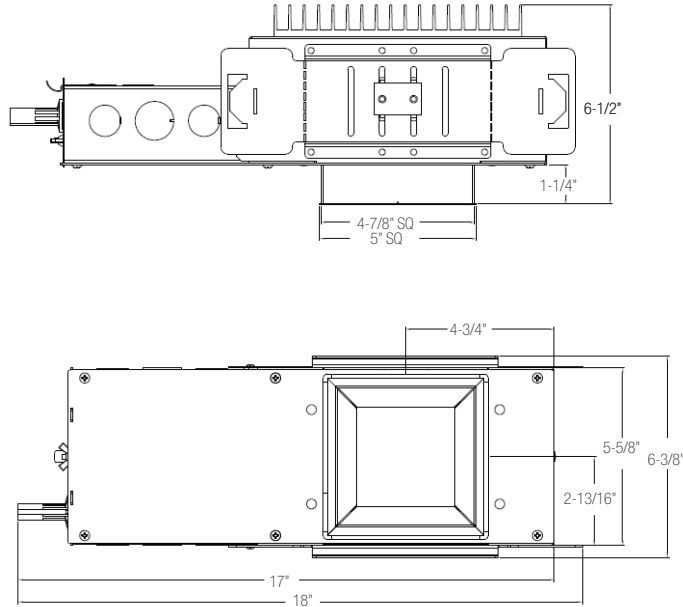
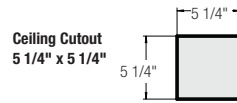


Octagon Ceiling Cutout
6 11/16" across flats

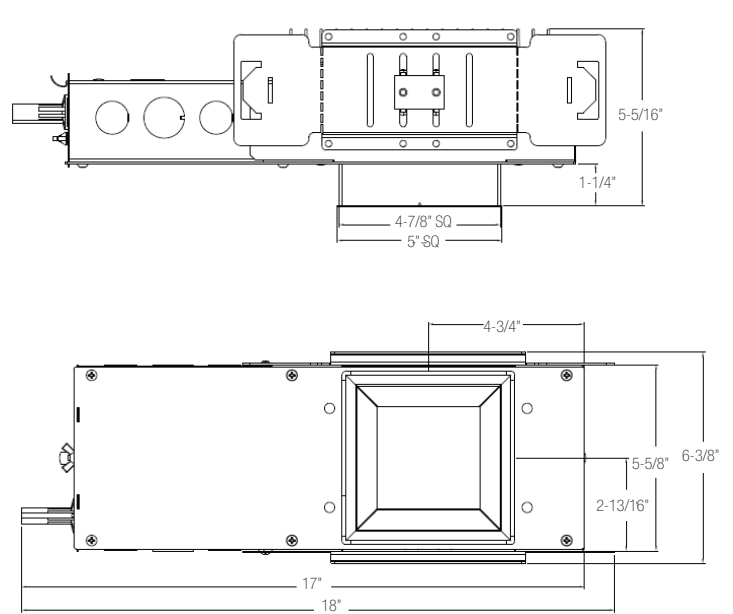
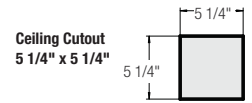


TYPE FB

TECHZONE VIEWS – 45° CUTOFF

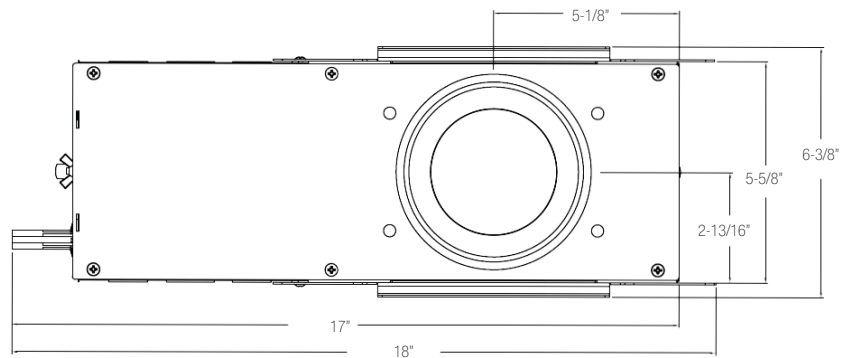
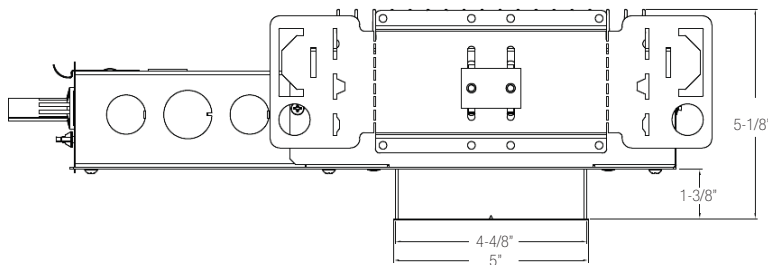


TECHZONE VIEWS – 55° CUTOFF



NOTE: Basys 4" Tech Zone units may be daisy chained together, however they are not labeled for Through Branch Circuit Wiring.

CHICAGO PLENUM



Photometric Data

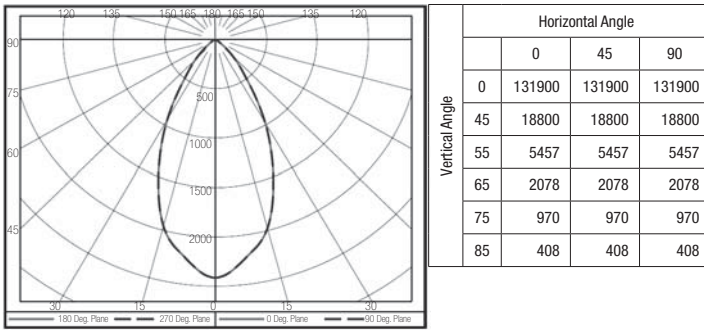
BASYS LED II

4" Round Downlight, 14W, 3500K, 80 CRI

Medium Beam, 55° cutoff

1005 lumens, 14.2W, 77.7 lm/W

Candela Distribution



Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50				30				10				0	
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10		
0	1196	1196	1196	1196	1168	1168	1168	1168	1116	1116	1116	1069	1069	1069	1025	1025	1025	1005				
1	1138	1109	1083	1060	1113	1088	1064	1043	1047	1028	1011	1009	995	981	975	963	953	935				
2	1079	1028	986	950	1056	1011	972	940	978	946	919	948	922	899	920	899	881	864				
3	1022	955	903	861	1001	940	893	854	914	874	840	889	856	827	867	838	814	798				
4	967	889	831	787	949	877	824	782	855	809	773	835	796	764	816	783	755	739				
5	916	830	769	724	900	820	763	721	802	752	714	785	742	708	769	731	701	686				
6	869	776	714	670	854	768	710	667	753	701	663	739	693	658	725	685	653	639				
7	825	728	666	622	811	721	662	621	708	656	617	696	649	614	685	643	610	596				
8	783	685	623	581	771	679	620	579	668	615	577	658	609	574	648	604	572	558				
9	745	646	585	544	734	641	583	543	631	578	541	622	574	539	614	569	537	523				
10	710	610	551	511	700	606	549	510	598	545	509	590	541	507	582	538	506	492				

IES FILE: 10730477-1018269

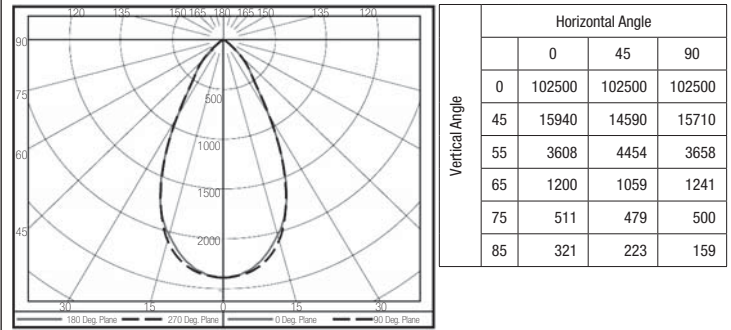
BASYS LED II

4" Round Downlight, 14W, 3500K, 80 CRI

Wide Beam, 55° cutoff

1063 lumens, 14W, 82 lm/W

Candela Distribution



Coefficients Of Utilization - Zonal Cavity Method

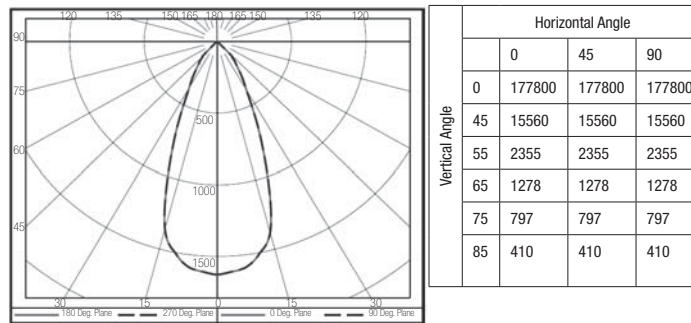
Effective Floor Cavity Reflectance 0.20

RC	80				70				50				30				10				0	
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10		
0	1266	1266	1266	1266	1236	1236	1236	1236	1181	1181	1181	1131	1131	1131	1085	1085	1085	1063				
1	1205	1175	1148	1123	1179	1152	1127	1105	1109	1089	1071	1069	1054	1039	1033	1021	1009	990				
2	1143	1090	1045	1008	1119	1071	1031	997	1037	1004	975	1005	978	954	976	954	934	917				
3	1083	1013	958	915	1062	998	948	907	970	927	893	944	908	879	920	890	865	848				
4	1026	943	883	836	1006	931	875	831	908	860	821	886	845	812	867	831	802	786				
5	972	881	817	770	955	871	811	766	851	799	759	833	788	753	817	777	746	730				
6	922	824	759	712	906	816	754	710	800	745	705	785	737	700	771	728	695	679				
7	875	774	708	662	860	766	704	660	753	697	657	740	690	653	728	683	649	634				
8	831	728	662	618	818	721	659	616	710	654	614	699	648	611	688	642	608	593				
9	791	686	622	578	779	681	619	577	670	615	575	661	610	573	652	605	571	557				
10	753	648	585	543	743	644	583	543	635	579	541	626	575	539	618	572	538	524				

IES FILE: 10730477-1018274

BASYS LED II
4" Round Downlight, 14W, 3500K, 80 CRI
Medium Beam, 45° cutoff
1067 lumens, 14W, 82 lm/W

Candela Distribution



Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50				30				10				0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
0	1271	1271	1271	1271	1241	1241	1241	1241	1186	1186	1186	1135	1135	1135	1089	1089	1089	1067			
1	1214	1185	1160	1137	1188	1162	1140	1119	1119	1101	1084	1080	1065	1052	1043	1032	1022	1003			
2	1157	1107	1066	1031	1134	1089	1052	1020	1055	1024	997	1023	998	976	994	974	956	939			
3	1103	1037	986	946	1082	1022	976	938	995	956	924	969	937	909	945	918	895	879			
4	1051	974	918	875	1032	962	910	870	939	895	859	918	880	850	899	867	840	824			
5	1002	917	858	814	985	907	852	811	888	840	803	871	829	796	855	819	790	774			
6	955	865	805	762	940	857	800	759	841	791	754	827	783	749	813	774	744	729			
7	912	819	758	715	899	812	754	713	798	747	710	786	740	706	774	733	702	688			
8	872	776	716	674	860	770	713	673	759	707	670	748	701	667	738	696	665	651			
9	834	737	678	638	823	732	675	636	722	671	634	713	666	632	704	662	630	617			
10	799	702	643	604	789	697	641	604	689	637	602	681	634	600	673	630	599	586			

IES FILE: 10730477-1018268



BASYS™ LED II

Applications: The BASYS LED II family offers a broad range of distributions, outputs and finishes. Whether you are looking to achieve high light levels or a sleek, minimalist appearance, BASYS LED II has an option to meet your lighting challenges. Perfect for offices, foyers, hallways, conference rooms or educational areas.

Type: _____

Project: _____

LED IBEW Union Made



BASYS LED II HOUSING

BR4W/LED2					
FIXTURE	TRIM/CEILING TYPE	WATTAGE/OUTPUT	LED MODULE	DRIVER	OPTIONS
BASYS LED II Round 4" Recessed Wallwasher Direct White LED CRI = 85 typical	N Standard Flange	14W 800 lm	827 2700K, 85 typical CRI	D_* Standard 0-10V Dimming Driver, 10%	CP Chicago Plenum EM_* Standby Battery Pack, 5W, 290lm F Fusing * Specify "1" for 120V or "2" for 277V.
	F Flangeless	22W 1000 lm	830 3000K, 85 typical CRI	DH_* Lutron HiLume A Series, 1%	
		30W 1250 lm	835 3500K, 85 typical CRI	DD_* DALI Dimming, 1%	
			840 4000K, 85 typical CRI		
	*NOTE: Unit is NOT designed be used in a 6"x6" square	For exact Lumen Output and Wattage consumption data, please consult LM-79 reports.	3.5-step MacAdam	* Specify "1" for 120V or "2" for 277V.	
		Trim Finish Multiplier for Lumen Output Clear Specular 1.10 Clear Semi-Specular 1.00 Matte 0.87 White Matte 0.80	CCT Multiplier for Lumen Output 2700K 0.87 3000K 0.93 3500K 1.00		

BASYS LED II TRIM

BR4W/LED2				
FIXTURE	TRIM/CEILING TYPE	REFLECTOR FINISH	FLANGE FINISH	OPTIONS
BASYS LED II Round 4" Recessed Wallwasher	N Standard Flange	CL Clear Specular	N Natural	E Standby Battery Pack test switch
	F Flangeless	CS Clear Semi-Specular	W White	
		MT Matte	C* Custom	
		WH White Matte	F Flangeless	
		CC* Custom		
		* For Custom Colors, please specify RAL # _____		

BASYS LED II MOUNTING

OPTIONS	
9930	Set of two 27" C-Channel mounting bars
9952	Set of two 52" C-Channel mounting bars
9956	Set of two 28" 10 ga. one-piece universal mounting bars



IBEW Union Made

Rated for Wet Locations

1) Housing - Enclosed housing is of 20-gauge galvanized steel. Shallow integral heat sink rests on top of the housing. 20-gauge aluminum plaster frame has a fixed throat of 1 3/8" to accommodate double-thickness plasterboard.

Thru Wire Box Oversized junction box is 16-gauge galvanized steel.

CSA listed for thru wiring (4 in and 4 out at 90°C) and has 7/8" and 1 1/8" knockouts.

Driver door provides access to driver and thru wire box through fixture aperture.

2) Wattage & CCT - Wattage options are 14W, 22W, or 30W. Available in 2700K, 3000K, 3500K, or 4000K color temperatures for 85 CRI. 3.5-step MacAdam.

3) Dimming - Basys LED II is available with 0-10V Dimming driver standard, with 10% dimming. 1% dimming is available with the Lutron HiLume A series. 0.1% dimming is available with a DALI driver. For non-dimming installations, the standard 0-10V dimming driver will be provided, and the dimming control wires can simply be capped off at installation.

Compatible 0-10V Dimmers:

- Lutron DVTV
- Lutron NTFTV
- LEVITON IP710-DLZ
- Wattstopper/Legrand ADF-120277
- Osram 45561 - LC-SL3W-TVWBX/UNV

4) Driver - The driver can be removed either through the aperture or back of thru wire box for replacement and ease of wire connection.

Standard Quick Disconnect for driver module allows driver to be removed completely from housing without tools. It offers quick connection to building power supply.

5) Standby Battery Pack - 5W, 290lm

6) Mounting - Rigid mounting brackets provide 3" vertical adjustment from inside aperture and plenum side of housing. Brackets accommodate One-Piece Universal Mounting Bar (mounting bars ordered as an optional accessory).

7) Reflectors - Upper Reflector - Reflector is anodized aluminum of high-specularity, vacuum metalized, designed to provide highest efficiency and effective beam distribution. The lens obscures direct view of the LEDs.

Lower Reflector - Compound parabolic curve. Aluminum anodized lower reflector is designed to provide iridescent-free finish. Tempered glass linear spread lens included.

Lower Reflector Finishes :

Clear Specular - highly polished post-anodized finish with dark light appearance. Precise light distribution and glare limitation provides highest lumen output.

Clear Semi-Specular - architectural visual identity is provided while maintaining precise directionality of light.

Matte - soft, diffuse, evenly illuminated surface provides a congruous appearance between the downlight and the ceiling.

White - Zumtobel White painted finish blends well with typical White painted ceilings.

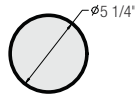
8) Life - 50,000 hours rated life. L70.

9) Weight - 4" STD = 9 lbs.
4" EM = 11 lbs.

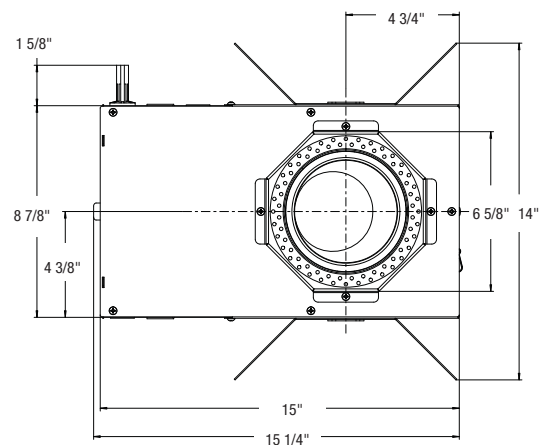
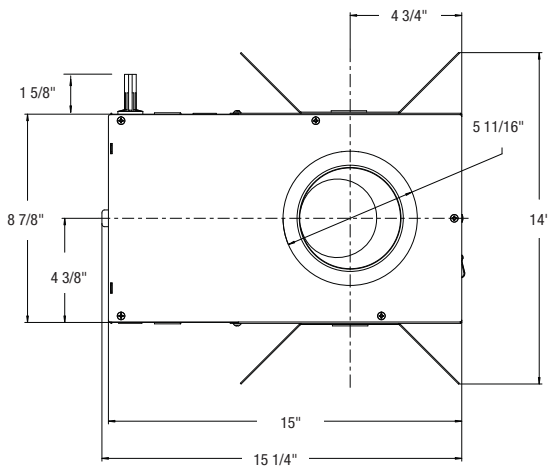
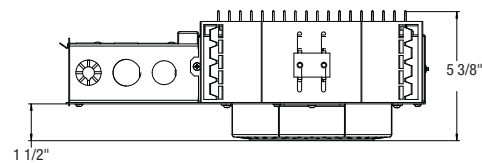
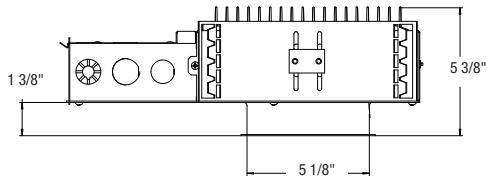
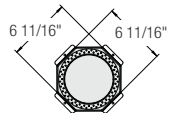
FLANGED VIEWS

FLANGELESS VIEWS

Ceiling Cutout
5 1/4" Diameter



Octagon Ceiling Cutout
6 11/16" across flats

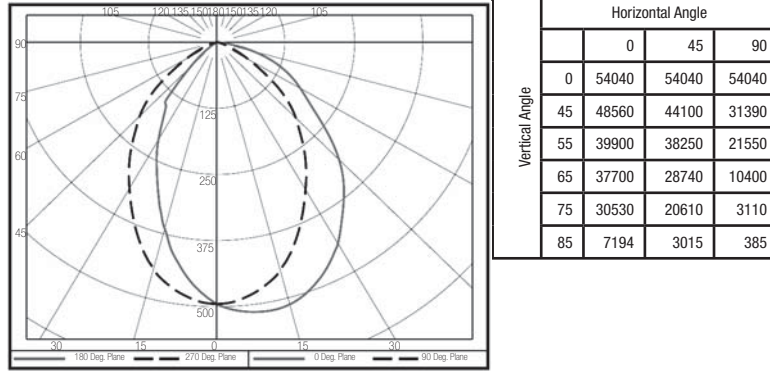


BASYS LED II

4" Round Wallwasher, 14W, 3500K, 80 CRI

857 lumens, 14W, 66.4 lm/W

Candela Distribution



Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	1020	1020	1020	1020	996	996	996	996	952	952	952	911	911	911	874	874	874	857
1	951	918	888	862	928	899	872	848	863	841	821	830	813	797	800	786	773	756
2	880	821	773	732	859	806	761	724	776	739	707	749	719	692	724	699	677	660
3	814	737	678	631	794	725	670	626	700	653	615	678	638	605	657	623	595	578
4	754	666	601	551	736	655	594	548	635	582	541	616	570	534	598	559	527	510
5	701	604	537	487	684	595	532	485	578	522	480	562	513	475	547	504	470	454
6	653	551	483	435	637	544	480	433	529	472	429	515	465	426	503	458	423	407
7	609	506	438	391	596	499	435	390	487	429	387	475	423	385	464	418	382	367
8	571	466	400	355	558	460	397	354	450	393	352	439	388	350	430	383	348	333
9	536	431	367	324	525	426	365	323	417	361	322	408	357	320	400	353	319	304
10	505	401	339	297	494	397	337	297	389	334	296	381	330	294	374	327	293	280

IES FILE: 10730477-1018271

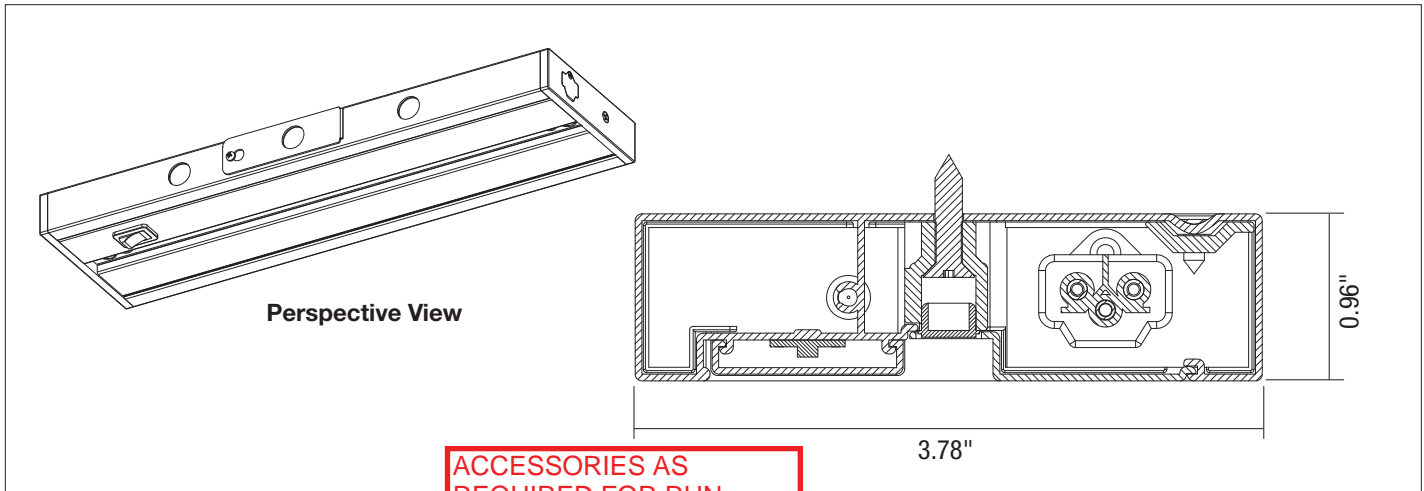
LED Under Cabinet

Job Name:

Fixture Type:

LED LINEAR LIGHTING SYSTEM

Series LUC



ACCESSORIES AS REQUIRED FOR RUN LENGTHS, AS PER PLANS

Ordering Guide

LUC **PER PLAN** / - **830** - **W** - 1

Fix Length Wattage Color Temp Finish

Length / Wattage	Color Temp	Finish
<input type="checkbox"/> 8 / 2.8W	<input checked="" type="checkbox"/> 830 (3000K)	<input type="checkbox"/> BZ Bronze
<input type="checkbox"/> 12 / 4W	<input type="checkbox"/> 840 (4000K)	<input checked="" type="checkbox"/> W White
<input type="checkbox"/> 18 / 6W		
<input type="checkbox"/> 24 / 8W		
<input type="checkbox"/> 32 / 10.8W		

Optional Components

- 72" Power Cord
 - LUC-P7W White LUC-P7B Black
- Portable Cord and Plug Set
 - LUC-PCW White LUC-PCB Black
- Junction Box with KO's and Rocker Switch
 - LUC-JBW White LUC-JBB Bronze
- Flexible Cable Connectors (for linkable connection)
 - 6" LUC-F6W White LUC-F6B Black
 - 12" LUC-F1W White LUC-F1B Black
 - 24" LUC-F2W White LUC-F2B Black
 - 72" LUC-F7W White LUC-F7B Black
- Occupancy Sensor Junction Box (consult factory)
 - LUC-OCW White LUC-OCB Bronze

Description

LED Under Cabinet is a 120 volt, low profile linear lighting system with frosted lens. Modular design for maximum flexibility and quick installation allows for continuous run lengths using In-line Connectors or optional Flexible Cable Connectors.

Features

- LED Type: Ultra Bright 5630 SMD
- In-line Connector for linkable end-to-end connection.
- Linkable to form varying lengths.
- Integral Rocker Switch.
- Fully dimmable with line voltage incandescent dimmers.
- Standard 1/2" KO's every 4" along back and top of housing.
- Hardwire or portable (Portable Cord and Plug Set, sold separately).

Fixture Specifications

Dimensions: (Spec)"L x 3.78"W x 0.96"H
 Weight: Approx. 0.25 lbs. per linear foot
 Max. Continuous Run Length: 100ft
 Wattage: 3.95 W/Ft
 Lumen Output: 247 Lu/Ft
 Lamp Life: 50,000+ hours
 CRI: 82+
 Beam Angle: 120°

Electrical

- Lumens per watt: 62.5
- Power consumption: Per specification.
- 400W max. connected load per power feed.
- Ambient temperature 90 °F. maximum.

Electrical Data Chart

Standard Power

Length	8.8"	12.3"	18.3"	24.3"	32.8"
Wattage	2.8	4	6	8	10.8
Total Lumens	175	250	375	500	675



All designs and scaled drawings shall remain the property of STARFIRE LIGHTING, INC., and may not be reproduced or transmitted without expressed written consent. STARFIRE LIGHTING, INC. reserves the right to make changes on approved designs to facilitate manufacturing methods to the extent that such changes do not compromise design integrity.

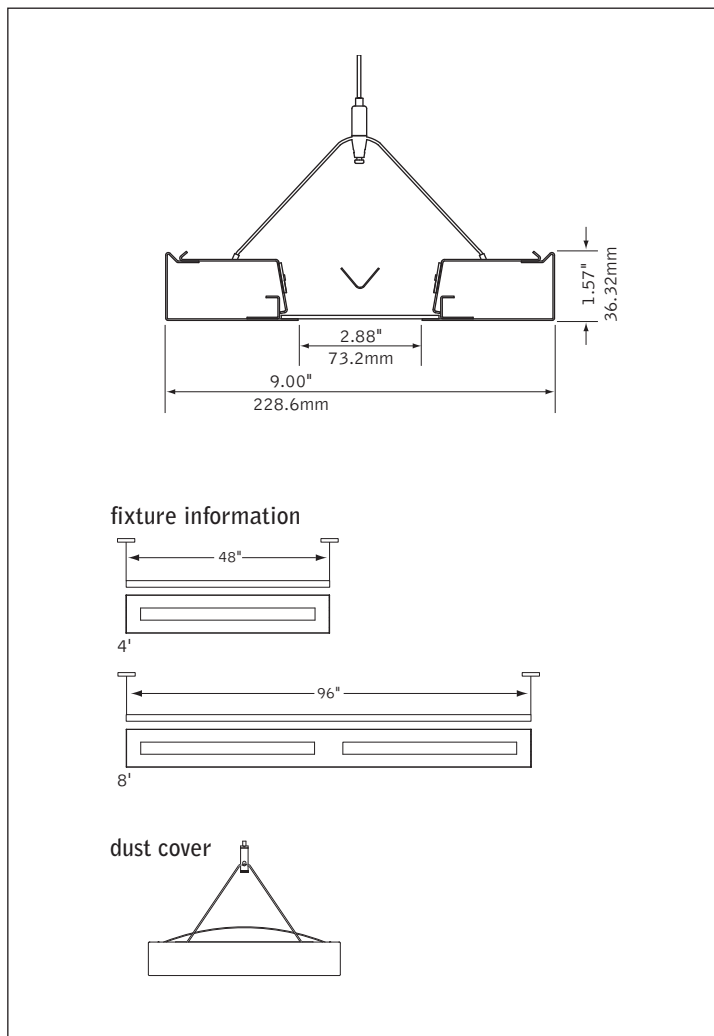


acrylic diffuser



microglow

DIMENSIONAL DATA



FEATURES

Low profile suspended direct/indirect LED luminaire.

Excellent choice for lower ceiling applications and areas where ceiling uniformity is important.

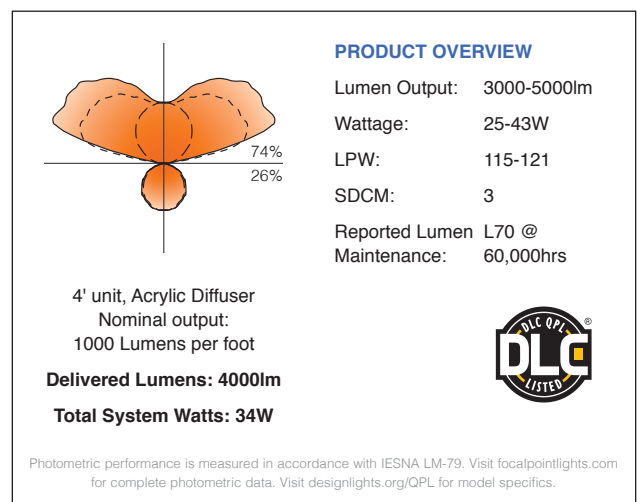
Features Gradient Optic which softens cut-off line on surrounding walls and other vertical structures.

MicroGlow lens offers cutoff & brightness control to support comfortable environments.

35% energy savings over comparable fluorescent versions.

Up to 108 lpw.

PERFORMANCE

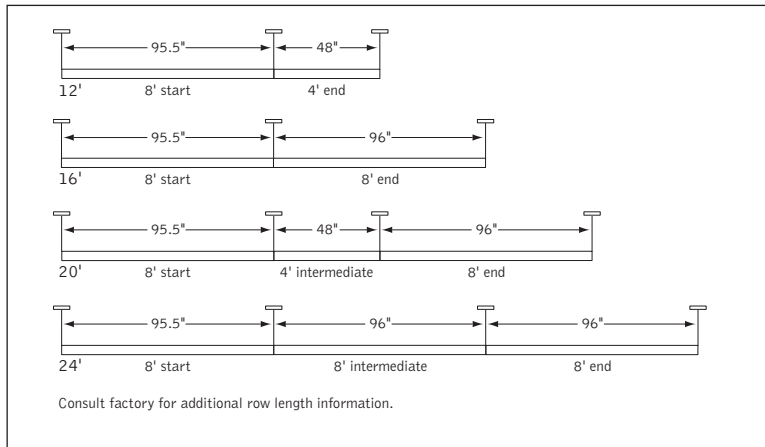


fixture:

project:

TYPE FE

SUSPENSION INFORMATION



SPECIFICATIONS

LED Systems

Linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. Available in 3000K, 3500K, 4000K with CRI>80, 3SDCM. LED boards and drivers are replaceable.

Construction

One-piece 20 Ga. steel housing. Steel end caps attach flush to housing. For row installation, internal brackets form hairline joint. All luminaires are provided with Y-cable suspension mounted on 48" or 96" centers. 4' unit weight: 22 lbs., 8' unit weight: 40 lbs.

Optic

Reflector fabricated of 22 Ga. steel finished in high reflectance matte white. 24 Ga. steel beam softening filter finished in matte white powder coat. .125" thick acrylic lens.

Electrical

Luminaires are pre-wired with factory installed branch circuit wiring and over-molded quick connects. Standard 120-277V constant current driver includes 0-10V analog dimming. Power factor > .9.

Emergency

IOTA CP12. Emergency output —12W for 90 minutes. Maximum mounting height: 11.25ft. Emergency Circuit maximum mounting height: 15.00ft.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a multi-stage pre-treatment. Canopy finished in Matte Satin White.

Lumen Maintenance

Calculated: L70 at 130,000 hours Reported: L70 at 60,000 hours
Derived from EPA TM-21 calculator per 10,000hrs of LED test data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

4' PERFORMANCE CHART

Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
750LF	3000	25	121
875LF	3500	29	120
1000LF	4000	34	118
1125LF	4500	38	117
1250LF	5000	43	115

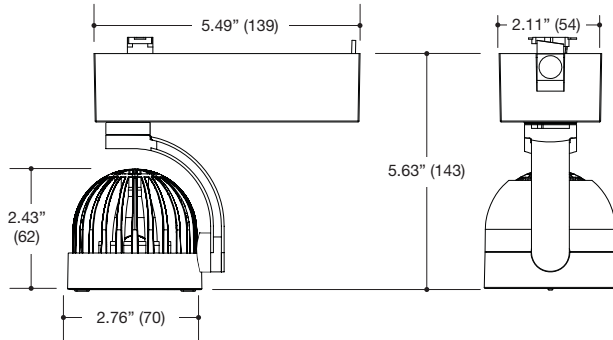
Based on 3500K. Color Temperature multipliers: 3000K - 1.035, 4000K - 0.975. *Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%

ORDERING

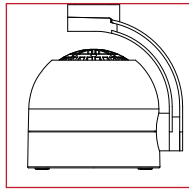
Fixture Series	Twelve LED	FTWLS	_____
Shielding	Acrylic Diffuser	AC	_____
MicroGlow Prismatic Lens	MG	_____	_____
Lumen Output	750 Lumens per foot	750LF	_____
	875 Lumens per foot	875LF	_____
	1000 Lumens per foot	1000LF	_____
	1125 Lumens per foot	1125LF	_____
	1250 Lumens per foot	1250LF	_____
Color Temperature	3000K	30K	_____
	3500K	35K	_____
	4000K	40K	_____
Circuits	Single Circuit	1C	_____
Voltage	120/277 UNV Volt	UNV	_____
	347 Volt	347	_____
	(LD1 only)		
Driver	0-10V - 1% Dimming	L11	_____
	0-10V - 10% Dimming	LD1	_____
	Lutron A-Series	L3D	_____
	1% EcoSystem Driver		
	(Consult factory for 3-wire control)		
	Lutron 5-Series	LU5	_____
	1% EcoSystem Driver		
	Lutron H-Series	LH1	_____
	1% Dimming		
	DALI - 1% Dimming	D11	_____
	DALI - 10% Dimming	DD1	_____
	Step Dimming	SD5	_____
	(Not available with 750LF)		
Mounting	12" Cable Suspension	J12	_____
	24" Cable Suspension	J24	_____
	48" Cable Suspension	J48	_____
	96" Cable Suspension	J96	_____
	(Add "P" for Chicago plenum. Eg: JP12, CP12)		
	(Specify one of the following in place of "J"		
	C - for 5" canopies at non-feed locations.		
	CS - for sloped ceilings.)		
Stem Mount	S	_____	_____
	(Specify stem length in inches Standard stem lengths 6, 12, 18, 24, 36, 48". White stems and canopies supplied standard. For non-white housings: to match stem and housing, add M to ordering code (S12M). To match stem, canopy and housing, add MC to ordering code (S12MC)		
Factory Options	Dust Cover	DC	_____
	Emergency Circuit	EC	_____
	Emergency Battery	EM	_____
	(Sensor options available—consult factory)		
Finish	Titanium Silver	TS	_____
	Matte Satin White	WH	_____
Fixture Run Length	4'	4'	_____
	8'	8'	_____
	12' (8'+4')	12'	_____
	16' (8'+8')	16'	_____
	20' (8'+4'+8')	20'	_____
	24' (8'+8'+8')	24'	_____
	(Individual units may not be field modified for continuous row mount)		



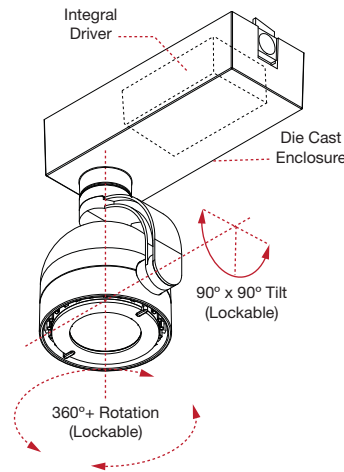
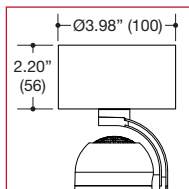
PROJECT	TYPE	CATALOG NUMBER
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Available with optional back cover "CV" - specify finish



Available with optional monopoint mounting - "M"



Shown with optional back cover (CV) in white finish.

TRACKHEAD

- 2.76" round trackhead
- Lockable 90° X 90° tilt aiming and 360°+ rotation
- Die cast aluminum head and gear housing
- Anodized aluminum reflector
- Optional lamp back cover
- Powder coat finish

LED SOURCE

- Integral LED Modules
- 11W / 960lm, 80CRI / 3000K
- 16W / 1460lm, 80CRI / 3000K
- Accepts up to 2 optical accessories
- 3 Step MacAdams (3 SDMC)

ELECTRICAL

- Integral LED driver
- Dimmable power supply available
- 1 or 2 circuit track compatible

MOUNTING

- Compatible with Halo®, Juno®, or Global® GES track
- Monopoint

LABELS

- Suitable for dry location

Patent Pending

Halo® is a registered trademark of Cooper Industries, Juno® is a registered trademark of Juno Lighting, Global® is a registered trademark of Nordic Aluminum.

Designed by Franco Mirenzi

3STEP
MacAdams

5 YEAR
WARRANTY
Limited



ORDERING INFO

SERIES	ADAPTER	WATTAGE	CRI / COLOR	BEAM	POWER SUPPLY	VOLTAGE	FINISH	OPTIONS
TRA10B	H Halo® compatible	11L 11W LED 960 lm nom.	8027 80CRI / 2700K	N Narrow 18°	LD LED Driver	1 120V	BB Black WW White	CV Back Cover
	J Juno® compatible		8030 80CRI / 3000K	M Medium 26°				
PALLA Trackhead Die-Cast Aluminum Adjustable	G Global® GES compatible	16L 16W LED 1460 lm nom.	8035 80CRI / 3500K	W Wide 38°	DT Phase Dimming 120V*			
	M Monopoint		8040 80CRI / 4000K					
					* Consult factory			

Ordering Example: **TRA10B-H-16L-8027-N-LD-1-WW-CV**

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We reserve the right to change or withdraw specifications without prior notice.

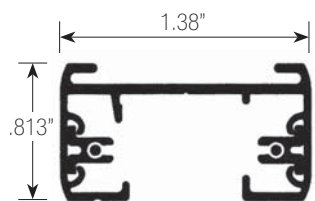
HEADQUARTERS
9200 Deering Avenue
Chatsworth CA 91311

Telephone: 818-885-1335
Toll Free: 855-885-1335
Fax: 818-576-1335

www.lfillumination.com
rev: 051316






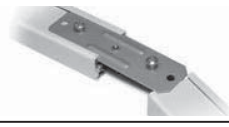
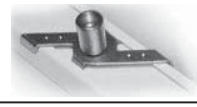
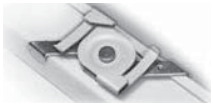
PROJECT	TYPE	CATALOG NUMBER
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20 AMP 120V ONE CIRCUIT TRACK SECTION

PRODUCT	CATALOG #	DESCRIPTION
	GES204-3	4' Track Section (44" actual length) - White
	GES204-2	4' Track Section (44" actual length) - Black
	GES204-1	4' Track Section (44" actual length) - Natural Aluminum
	GES208-3	8' Track Section (92" actual length) - White
	GES208-2	8' Track Section (92" actual length) - Black
	GES208-1	8' Track Section (92" actual length) - Natural Aluminum
	GES212-3	12' Track Section (140" actual length) - White
	GES212-2	12' Track Section (140" actual length) - Black
	GES212-1	12' Track Section (140" actual length) - Natural Aluminum

GLOBAL 20 AMP 120V TRACK ACCESSORIES

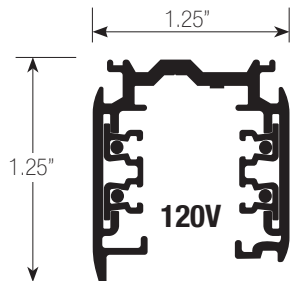

20 AMP 120V TRACK ACCESSORIES

PRODUCT	CATALOG #	DESCRIPTION
	GES11	Live End Feed for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES13	Circuit End Feed for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES14	Live Center Feed for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES21	Linear Coupler for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES66	Field Switchable Track Adapter - <ul style="list-style-type: none"> • Max 20lbs / 600W • Supplied with 1/8" 27 IPS threaded nipple for fixture connection • Grounded nipple (GEA66GW) available upon request <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GEA21	Track Reinforcement Plate <ul style="list-style-type: none"> • For use with Linear Coupler to strengthen mechanical connection between track sections
	GEA6	Threaded Rod Mounting Clip
	GEA7	T-Bar Mounting Clip

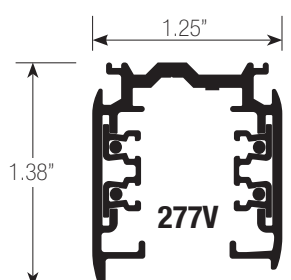

PRODUCT	CATALOG #	DESCRIPTION
	GES34	Feedable "L" Connector for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES40	Feedable "T" Connector for One Circuit Track / Left / Right Configurable <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES38	Feedable "X" Connector for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES13+16	Conduit Continuation Kit for One Circuit Track Used to jumper track runs around obstacles <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES41	Dead End - Included with live end feeds, Live center feeds, conduit end feeds and L, T, and X connectors. May also be ordered separately. <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES15	Outlet Box Cover <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES70	Monopoint Canopy - One Circuit <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES67	Floating Feed for One Circuit Track <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES17	T-Bar Feed Kit for One Circuit Track Allows for feeding of track from an intersection point in a suspended ceiling application. For use with GES/GET 11, 14, 34, 38, 39 & 40 connectors. <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GEA3712 GEA3718 GEA3724 GEA3748	12" Stem Kit Includes stem and canopy 18" Stem Kit Includes stem and canopy 24" Stem Kit Includes stem and canopy 48" Stem Kit Includes stem and canopy <i>For finish add: -2 = Black, -3 = White</i>
	GEA10	Universal Stem Suspension Point (Stem not included) <i>For finish add: -2 = Black, -3 = White</i>
	GEA11	End Feed Stem Suspension Point (Stem not included) <i>For finish add: -2 = Black, -3 = White</i>
	GES11CB GES14CB	Description GES Live End Feed / Current Limiter Enclosure GES Live Center Feed / Current Limiter Enclosure <i>(Circuit breaker by others)</i> <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i> <i>Order Example: GES11CBSG</i>

PROJECT	TYPE	CATALOG NUMBER
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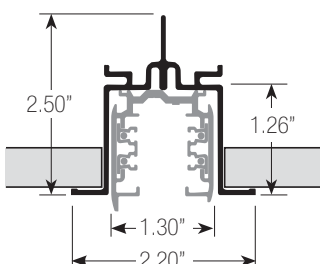
20 AMP 120V TWO CIRCUIT / TWO NEUTRAL TRACK LENGTHS

PRODUCT	CATALOG #	DESCRIPTION	ACCESSORY
	TEK404-3	4' 120V Track Section - 2cct/2ntl - White	XTSV12 Bending Tool 
	TEK404-2	4' 120V Track Section - 2cct/2ntl - Black	
	TEK404-1	4' 120V Track Section - 2cct/2ntl - Natural Aluminum	
	TEK408-3	8' 120V Track Section - 2cct/2ntl - White	
	TEK408-2	8' 120V Track Section - 2cct/2ntl - Black	
	TEK408-1	8' 120V Track Section - 2cct/2ntl - Natural Aluminum	
	TEK412-3	12' 120V Track Section - 2cct/2ntl - White	
	TEK412-2	12' 120V Track Section - 2cct/2ntl - Black	
	TEK412-1	12' 120V Track Section - 2cct/2ntl - Natural Aluminum	




20 AMP 277V TWO CIRCUIT / TWO NEUTRAL TRACK LENGTHS

PRODUCT	CATALOG #	DESCRIPTION	ACCESSORY
	HTEK404-3	4' 277V Track Section - 2cct/2ntl - White	XTSV12 Bending Tool 
	HTEK404-2	4' 277V Track Section - 2cct/2ntl - Black	
	HTEK404-1	4' 277V Track Section - 2cct/2ntl - Natural Aluminum	
	HTEK408-3	8' 277V Track Section - 2cct/2ntl - White	
	HTEK408-2	8' 277V Track Section - 2cct/2ntl - Black	
	HTEK408-1	8' 277V Track Section - 2cct/2ntl - Natural Aluminum	
	HTEK412-3	12' 277V Track Section - 2cct/2ntl - White	
	HTEK412-2	12' 277V Track Section - 2cct/2ntl - Black	
	HTEK412-1	12' 277V Track Section - 2cct/2ntl - Natural Aluminum	












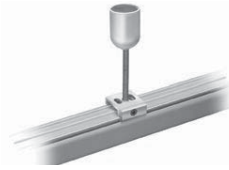

RECESSED HOUSING FOR TWO CIRCUIT / TWO NEUTRAL TRACK SECTIONS 120V or 277V

PRODUCT	CATALOG #	DESCRIPTION
	FTP404-3	4' 3.50" Recessed Track Housing - White
	FTP404-2	4' 3.50" Recessed Track Housing - Black
	FTP404-1	4' 3.50" Recessed Track Housing - Natural Aluminum
	FTP408-3	8' 3.50" Recessed Track Housing - White
	FTP408-2	8' 3.50" Recessed Track Housing - Black
	FTP408-1	8' 3.50" Recessed Track Housing - Natural Aluminum
	FTP412-3	12' 3.50" Recessed Track Housing - White
	FTP412-2	12' 3.50" Recessed Track Housing - Black
	FTP412-1	12' 3.50" Recessed Track Housing - Natural Aluminum

20 AMP 120V / 277V TWO CIRCUIT / TWO NEUTRAL TRACK ACCESSORIES

PRODUCT	CATALOG #	DESCRIPTION
	TEK11 HTEK11	Live End Feed for 2 Circuit / 2 Neutral Track 120V Live End Feed for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK21 HTEK21	Linear Coupler for 2 Circuit / 2 Neutral Track 120V Linear Coupler for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK14 HTEK14	Live Center Feed for 2 Circuit / 2 Neutral Track 120V Live Center Feed for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>

20 AMP 120V / 277V TWO CIRCUIT / TWO NEUTRAL TRACK ACCESSORIES

PRODUCT	CATALOG #	DESCRIPTION
	TEK100	Adapter - Switchable between circuits & on / off • Max. 20lbs. / 1200W - Includes rotation lock <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	HTEK100	Adapter - Switchable between circuits & on / off • Max. 20lbs. / 2770W - Includes rotation lock <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	SKBX12 SKBT12 SKB12	GWB Ceiling Mounting Clip T-Bar Ceiling Mounting Clip Suspension Clip for Cable or Threaded Rod. <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK34 HTEK34	Feedable "L" Connector for 2 Circuit / 2 Neutral Track 120V Feedable "L" Connector for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK39 TEK40 HTEK39 HTEK40	Feedable "T" Connector for 2 Circuit / 2 Neutral Track Adjustable Right Polarity 120V Feedable "T" Connector for 2 Circuit / 2 Neutral Track Adjustable Left Polarity 120V Feedable "T" Connector for 2 Circuit / 2 Neutral Track Adjustable Right Polarity 277V Feedable "T" Connector for 2 Circuit / 2 Neutral Track Adjustable Left Polarity 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK38 HTEK38	Feedable "X" Connector for 2 Circuit / 2 Neutral Track 120V Feedable "X" Connector for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK24 HTEK24	Adjustable Elbow Connector for 2 Circuit / 2 Neutral Track 120V Adjustable Elbow Connector for 2 Circuit / 2 Neutral Track 277V <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	TEK41 HTEK41	Dead End 120V (Must be ordered separately) Dead End 277V (Must be ordered separately) <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	GES15	Outlet Box Cover <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>
	SPUS12 SPUS18 SPUS24 SPUS48	12" Stem Kit Includes stem and canopy 18" Stem Kit Includes stem and canopy 24" Stem Kit Includes stem and canopy 48" Stem Kit Includes stem and canopy <i>For finish add: -2 = Black, -3 = White</i>
	SP4P	Universal Stem Suspension Point Also works with cable and threaded rod suspension. Includes bracket and cover. Stem not included <i>For finish add: -2 = Black, -3 = White</i>
	SKB30 SKB34 SKB32 SKB12	Cable or Threaded Rod Mount Ceiling Cup. Cable (Must specify length. Finish n/a) Plastic Cover Tube for Threaded Rod (65' Roll) Cable or Threaded Rod Mount Clip <i>For finish add: -2 = Black, -3 = White</i> <i>(Threaded rod by others)</i>
	TEK11CB HTEK11CB	Description TEK Live End Feed / Current Limiter Enclosure 120V HTEK Live End Feed / Current Limiter Enclosure 277V <i>(Circuit breaker by others)</i> <i>For finish add: -1 = Silver/Gray, -2 = Black, -3 = White</i>

LS Series

LS4™ LED Surface Ambient Luminaire – 4'

TYPE FG

Product Description

The LS4™ surface ambient luminaire delivers up to 109 lumens per watt of Cree TrueWhite® Technology 90+ CRI illumination. The 4' (1219mm) luminaire is available with up to 5000 lumens in 3500K, 4000K and 5000K color temperatures. The LS Series features sleek and compact architectural design with flexible lumen packages, color temperatures and standard 0-10V dimming. Flexible mounting of the LS Series allows for individual mount or continuous row applications for surface mount, suspended mount, pendant mount and cove installations.

Applications: Surface ambient applications for new construction and upgrade.

Performance Summary

Utilizes Cree TrueWhite® Technology

Initial Delivered Lumens: 2,500-5,000 lumens

Input Power: 23-50 watts

Efficacy: Up to 109 LPW

CRI: 90+ CRI

CCT: 3500K, 4000K, 5000K

Input Voltage: 120-277, 347 VAC

L₇₀ Lifetime: > 100,000 hours at 35°C

Limited Warranty*: 10 years on luminaire

Limited Warranty Emergency Back Up (EB) Battery: 1 Year on Battery Back Up. Test regularly in accordance with local codes

Dimensions: L 48.0" (1219mm) x W 2.5" (64mm) x H 3.0" (77mm)

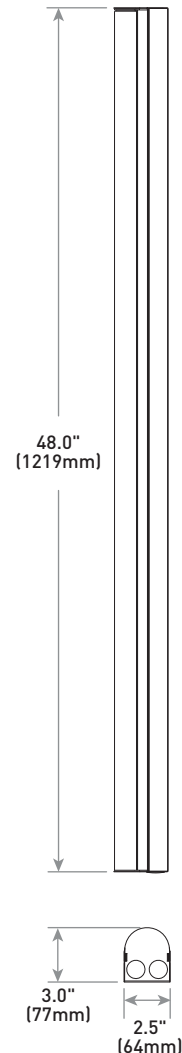
Weight: 5 lbs. (2.3kg)

Dimming: 0-10V dimming to 5%

*See <http://lighting.cree.com/warranty> for warranty terms

Reflectors & Accessories

Field-Installed		
Reflectors - Refer to reflector spec sheet Solid LS4-SR - Pair of reflectors Apertured LS4-AR - Pair of reflectors Joint Aligner LS-RJ - Top housing aligner for continuous rows LS-RFLJ - Reflector aligner for continuous row	Adjustable Cable Support Kits for T-Bar Applications AC5-48-Q14B-TB - Includes 5.0" (127mm) Canopy, 48.0" (1219mm) Adjustable Cable, Q14B Gripper and T-Bar Clip Continuous Row Through Wiring Kit LS4TWK - Includes (3) #12AWG 54.0" (1372mm) Wires for Line (black), Neutral (white), Ground (green), (2) #18AWG 54.0" (1372mm) Wires for 0-10V dimming - Optional accessory for use when luminaire is not ordered with factory installed TW option - Not for use with 347V or EB14 option	Adjustable Cable Support Kits w/ Power Feeds AC5-12/3-48-Q14B-JB - Non-dimming applications - Includes 5.0" (127mm) Cable Canopy, 48" (1219mm) #12/3 SJT Cord, Q14B Gripper and J-Box Strap AC5-18/5-48-Q14B-JB - Dimming applications - Includes 5.0" (127mm) Cable Canopy, 48.0" (1219mm) #18/5 SJT Cord, Q14B Gripper and J-Box Strap AC5-18/2-48-Q14B-JB - For use with AC5-12/3-48-Q14B-JB for selective luminaire dimming control in row mounted luminaires - Includes 5.0" (127mm) Cable Canopy, 48.0" (1219mm) #18/2 SVT Cord, Q14B Gripper and J-Box Strap Dimming Occupancy Sensor w/Photocell S-WRAC-OC-1 - Enables daylight harvesting - Not for use with 347V or EB14 option - Not for continuous row applications - Refer to installation instructions for details



Ordering Information

Example: LS4-40L-35K-10V

LS4			10V		
Product	Initial Delivered Lumens	CCT	Control	Voltage	Options
LS4	25L 23W, 2,500 lumens	35K 3500K	10V 0-10V dimming	Blank 120-277 Volt	EB14 Emergency Backup - Minimum 90 minutes - 1,400 lumens - Available in US only - Minimum operating temperature: 0°C (32°F) TW Through Wire Option - Factory installed - Includes quick connects for use in continuous row applications - Not for use with 347V or EB14 option
	40L 44W, 4,000 lumens	40K 4000K	to 5%	347 Volt	
	50L 50W, 5,000 lumens	50K 5000K		- Available with 40L only	



Rev. Date: V6 01/20/2017



LS Series Surface Ambient Luminaire – 4'

Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Constructed of durable 22 gauge steel
- Acrylic lens delivers a low-glare, diffused light distribution
- Prepainted white for enhanced smooth finish

OPTICAL SYSTEM

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation and color fringing
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This increases the perception of spaciousness

ELECTRICAL SYSTEM

- **Power Factor:** > 0.9
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277 or 347 VAC, 60Hz
- **Operating Temperature Range:** -28°C - +35°C (-18.4°F - +95°F); minimum operating temperature with EB14 option is 0°C (32°F)
- **Total Harmonic Distortion:** < 20% for 120-277V

CONTROLS

- Continuous dimming to 5% with 0-10V DC control protocol
- **10V Source Current:** 0.25mA
- For use with Class 1 or Class 2 dimming systems. Use only lighting controls with relay or FET-based outputs, or lighting controls with neutral connection. Reference www.creelink.com/exLink.asp?70982140Z58R34I26620963 for recommended dimming controls and wiring diagrams

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Suitable for continuous row mounting
- Designed for indoor use
- Not intended for use in environments containing airborne corrosive agents such as chemical solvents, cleaners, or cutting fluids
- **Ingress Protection:** IP20
- UL924 (EB option). Maximum mounting height: 10.0' (3.0m)
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- DLC qualified. Please refer to <http://www.designlights.org/QPL> for most current information

Electrical Data*						
Initial Delivered Lumens	System Watts 120-347V	Total Current (A)				
		120V	208V	240V	277V	347V
25L	23	0.20	0.12	0.11	0.09	N/A
25L w/EB14	27	0.23	0.14	0.13	0.11	N/A
40L	44	0.37	0.24	0.20	0.17	0.13
40L w/EB14	44	0.37	0.24	0.20	0.17	N/A
50L	50	0.44	0.27	0.23	0.19	N/A
50L w/EB14	55	0.47	0.29	0.25	0.21	N/A

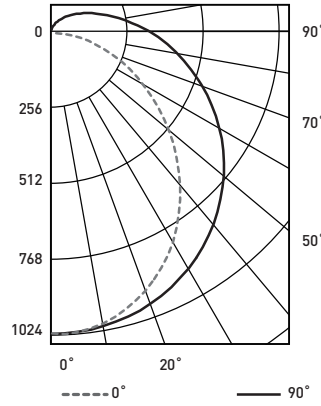
* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-347V +/- 10%

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Photometry

LS4-40L-40K BASED ON CESTL REPORT TEST #: PL03353-001

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	3,009	3,545	4,045
55°	2,588	3,434	4,129
65°	2,113	3,403	4,322
75°	1,552	3,562	4,787
85°	754	4,367	6,196

Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	116	116	116	116
1	104	98	93	88
2	93	84	76	70
3	85	73	64	57
4	77	64	55	48
5	71	57	48	41
6	65	51	42	35
7	60	46	37	31
8	56	42	34	28
9	52	39	30	25
10	49	36	28	22

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	796	N/A	20.4%
0-40	1,309	N/A	33.6%
0-60	2,375	N/A	60.9%
0-90	3,447	N/A	88.4%
0-180	3,898	N/A	100%

Reference <http://lighting.cree.com/products/indoor/surface-ambient/ls-series> for detailed photometric data

Recommended LS Series Lumen Maintenance Factors (LMF) ¹					
Ambient	Initial LMF	25K hr Projected ² LMF	50K hr Projected ² LMF	75K hr Projected ² LMF	100K hr Calculated ³ LMF
0°C (32°F)	1.05	0.99	0.96	0.92	0.88
5°C (41°F)	1.04	0.99	0.95	0.91	0.87
10°C (50°F)	1.03	0.98	0.94	0.90	0.86
15°C (59°F)	1.02	0.97	0.93	0.89	0.86
20°C (68°F)	1.01	0.96	0.92	0.88	0.85
25°C (77°F)	1.00	0.95	0.91	0.87	0.84
30°C (86°F)	0.99	0.94	0.90	0.86	0.83
35°C (95°F)	0.98	0.93	0.89	0.86	0.82

¹ Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

² In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

³ In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

Equation™ 2 2x2

LED

TYPE FH



FOCAL POINT®



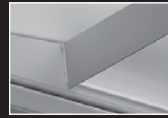
opal acrylic lens



MicroGlow™ lens

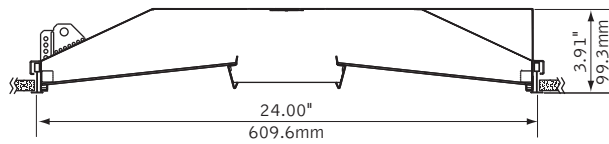


suspended or surface mount



air return

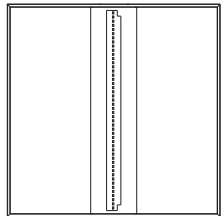
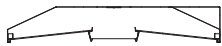
DIMENSIONAL DATA



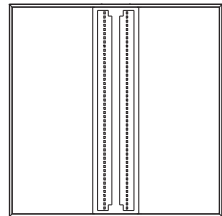
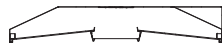
Overall height for luminaire with air return is 4.60"

led options

Standard



High Efficiency



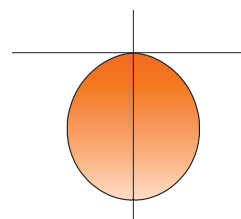
FEATURES

Equation™ 2 blends sleek aesthetics with uniform diffuse illumination.

Center diffuser features MicroGlow™ prismatic lens for brightness control and visual comfort. Opal acrylic center lens may also be specified.

Premium LEDs operate efficiently on a robust module platform to achieve excellent thermal management and reliable operation.

PERFORMANCE



Opal Acrylic Lens

Delivered Lumens: 3500lm

Total System Watts: 35W

PRODUCT OVERVIEW

Lumen Output: 2000-5000lm

Wattage: 21-54W

LPW: 83-103

SDCM: 3

Reported Lumen L80 @

Maintenance: 60,000hrs

Photometric performance is measured in accordance with IESNA LM-79. Visit focalpointlights.com for complete photometric data. Visit designlights.org/OPL for model specifics.

fixture:

project:

TYPE FH

MOUNTING INFORMATION

grid

1/2" flat tee
1/2" slot tee
4.62"-4.89"

drywall frame kit

specify "F" Drywall Frame Kit for drywall ceiling conditions.

Use tie-wire or screws to secure frame kit.
Cut out dimensions:
2': Min: 24.25"
Max: 24.563"

SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. LEDs are placed to promote a uniform appearance. Available in 3000K, 3000K or 4000K with CRI>80, 3 SDCM. Contact factory for additional color temperature and CRI options. 0-10V dimming driver standard. LED modules and drivers are replaceable from below.

Construction

One-piece 24 Ga. steel reflector and housing. 24 Ga. steel ends. Bottom access 24 Ga. steel driver compartment. Positional brackets supplied as standard. Standard weight: 15.4 lbs. Surface-mount/suspended weight: 19 lbs.

Optic

24 Ga. steel reflectors finished in matte satin white powder coat. .080" thick frosted white acrylic diffusers. Center shielding options include .080" thick opal acrylic lens or MicroGlow™ prismatic lens with optical filter overlay.

Electrical

Standard 120-277V driver includes 0-10V analog dimming. Power factor > .9. Optional DALI, Lutron Ecosystem or Step-dimming drivers available.

Emergency Battery

Bodine BSL310-CAN. Emergency output—10 watts for 90 minutes.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a 5-stage pre-treatment.

Lumen Maintenance

Reported: L80 at 60,000 hours
(Derived from EPA TM-21 calculator per 10,000 hours of LED test data)

Warranty

LED system rated for operation in ambient environments up to 25°C. 5-year limited warranty.

PERFORMANCE CHART

Delivered Lumens		Tested System Watts	LPW
2000 Lumens	2000L	21	96
	2500L	28	92
2500 Lumens	2500LH	25	103
	3000L	35	88
3000 Lumens	3000LH	30	101
	3500L	42	83
3500 Lumens	3500LH	35	100
	4000L	41	97
4000 Lumens	4000LH	41	97
	4500L	47	94
4500 Lumens	4500LH	47	94
	5000L	54	90
5000 Lumens	5000LH	54	90

*Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%. Multipliers: 2700K - 0.949, 3000K - 0.966, 4000K - 1.025.

ORDERING

Luminaire Series	FEQ2
Equation 2	FEQ2
Nominal Size	22
2' x 2'	22
Shielding	
Opal Acrylic Lens	AC
MicroGlow™ Prismatic Lens	MG
Lumen Output	
Standard	
2000 Lumens	2000L
2500 Lumens	2500L
3000 Lumens	3000L
3500 Lumens	3500L
High Efficiency	
2500 Lumens	2500LH
3000 Lumens	3000LH
3500 Lumens	3500LH
4000 Lumens	4000LH
4500 Lumens	4500LH
5000 Lumens	5000LH
Color Temperature	
3000K	30K
3500K	35K
4000K	40K
Circuit	1C
Single Circuit	1C
Voltage	
UNV 120/277 Volt	UNV
347 Volt	347
<small>(Not available with SD5. Cannot combine 347V and EM with L11, D11 or Lutron driver. Transformer required for all drivers except LD1.)</small>	
Driver	
0-10V - 10% Dimming	LD1
0-10V - 1% Dimming	L11
Lutron A-Series -	L3D
1% EcoSystem Digital	
<small>(4000 Lumens or less only. Consult factory for 3-wire control)</small>	
Lutron H-Series - 1% Dimming	LH1
Lutron 5-Series -	LU5
5% EcoSystem Digital	
DALI - 1% Dimming	D11
<small>(2000L, 2500L, 2500LH & 3000LH only)</small>	
Step Dimming	SD5
<small>(Not available with 2500LH. 120/277 only.)</small>	
Mounting	
24" Aircraft Cable	C24
48" Aircraft Cable	C48
96" Aircraft Cable	C96
Drywall Frame Kit	F
<small>(Cut out dimensions: Min: 24.25"/Max: 24.563")</small>	
Grid	G
Slot Tee	ST
Surface Mount	SM
Factory Options	
Air Return	AR
<small>(Overall height with Air Return is 4.62"-4.89")</small>	
Chicago Plenum	CP
Emergency Battery Pack with Integral Test Switch	EM
<small>(Cannot combine 347V and EM with L11, D11 or Lutron driver.)</small>	
6' New York City Flex Whip (120V)	FN1Y1
6' New York City Flex Whip (277V)	FN1Y2
6' Flex Whip	FW
<small>(Sensor options available - consult factory)</small>	
Finish	WH
Matte Satin White	WH

GC TO COORDINATE



TYPE FH

Equation™ 2 2x2

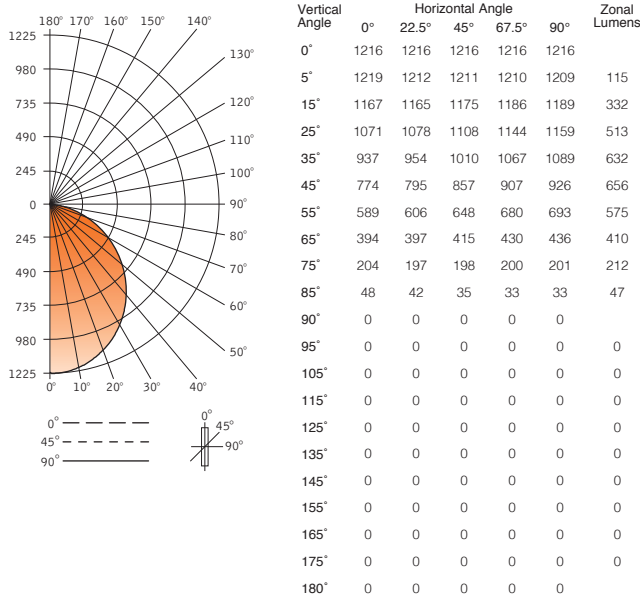
LED

FEQ2-22-AC-3500LLH-35K-1C-UNV-LD1

Filename: FEQ222AC3500LLH35K.IES
Test #: 1246031 extrapolated

Lumens: 3493lm
System Watts: 35W
LPW: 100

CANDLEPOWER DISTRIBUTION



LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	960	27.5
0-40°	1592	45.6
0-60°	2823	80.8
0-90°	3493	100.0
Total Luminaire 0-180°	3493	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	0°	45°	90°
45°	3274	3627	3917
55°	3074	3382	3615
65°	2788	2939	3084
75°	2354	2286	2326
85°	1639	1208	1134

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling Wall	80				70			20		30		10		00
	70	50	30	10	70	50	10	50	10	50	10	50	10	00
RCR 0	119	119	119	119	116	116	116	111	111	106	106	102	102	100
1	109	104	100	97	106	102	95	98	92	94	89	90	87	84
2	99	91	85	79	97	89	78	86	76	83	74	79	73	71
3	91	80	72	66	88	79	65	76	64	73	63	70	62	60
4	83	71	62	56	81	70	55	67	54	65	54	63	53	51
5	76	63	54	48	74	62	48	60	47	58	47	56	46	44
6	70	57	48	42	68	56	42	54	41	53	41	51	40	38
7	65	52	43	37	63	51	37	49	36	48	36	47	36	34
8	61	47	39	33	59	46	33	45	32	44	32	43	32	30
9	57	43	35	29	55	43	29	41	29	40	29	39	29	27
10	53	40	32	27	52	39	27	38	26	37	26	37	26	24

Numbers indicate percentage values of reflectivity.

Go to www.focalpointlights.com for additional photometric data.

Equation™ 2 2x2

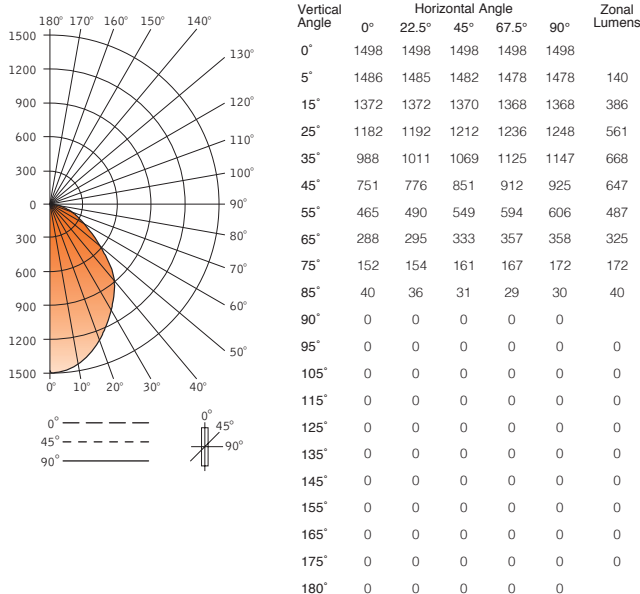
LED

FEQ2-22-MG-3500LH-35K-1C-UNV-LD1

Filename: FEQ222MG3500LH35K.IES
Test #: 1237068 extrapolated

Lumens: 3425lm
System Watts: 35W
LPW: 98

CANDLEPOWER DISTRIBUTION



LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30°	1086	31.7
0-40°	1735	51.2
0-60°	2888	84.3
0-90°	3425	100.0
Total Luminaire 0-180°	3425	100.0

LUMINANCE DATA (CD/M²)

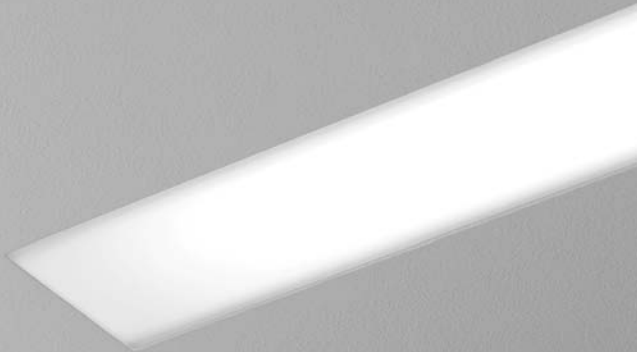
Vertical Angle	0°	45°	90°
45°	3178	3602	3913
55°	2427	2864	3161
65°	2037	2357	2531
75°	1761	1866	1990
85°	1365	1051	1015

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling Wall	80				70			20		30		10		00
	70	50	30	10	70	50	10	50	10	50	10	50	10	00
RCR 0	119	119	119	119	116	116	116	111	111	106	106	102	102	100
1	110	105	101	98	107	103	96	99	93	95	90	91	88	86
2	101	93	87	81	98	91	80	88	78	84	77	81	75	73
3	92	82	75	69	90	81	68	78	67	75	66	73	65	62
4	85	74	65	59	83	72	59	70	58	67	57	65	56	54
5	78	66	58	51	76	65	51	63	50	61	50	59	49	47
6	73	60	51	45	71	59	45	57	45	55	44	54	44	42
7	67	54	46	40	66	54	40	52	40	51	39	49	39	37
8	63	50	41	36	61	49	36	48	36	47	36	46	35	33
9	59	46	38	33	57	45	33	44	32	43	32	42	32	30
10	55	42	35	30	54	42	30	41	29	40	29	39	29	28

Numbers indicate percentage values of reflectivity.

Go to www.focalpointlights.com for additional photometric data.



trimless mud-in



trim flange



grid



end detail



corner detail



regress lens



wall to ceiling companion



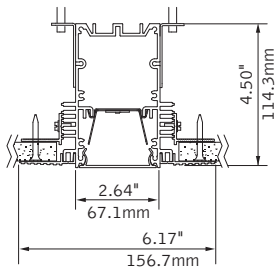
perimeter companion



suspended & wall mount companions

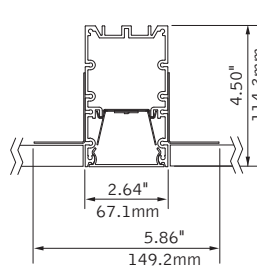
DIMENSIONAL DATA

trimless mud-in



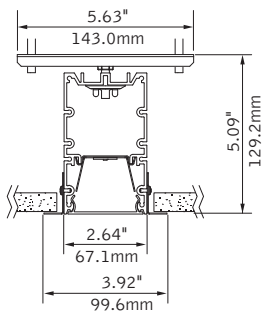
note: 0.375"min - 2.125"max ceiling thickness

hard surface

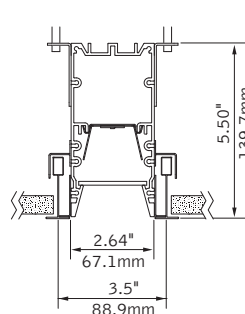


note: 0.375"min - 2.125"max ceiling thickness

trim flange



grid - regress lens shown



FEATURES

Narrow extruded aluminum 2.5" aperture recessed slot LED.

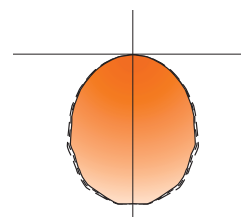
Integrates with ceiling or wall in a variety of mounting styles for a clean, unobtrusive aesthetic.

Individual units and continuous runs in 1" increments.

Frosted acrylic lens provides uninterrupted illumination, without pixels or shadows.

LED position and lens material optimized to provide the perfect blend of high performance and visual comfort.

PERFORMANCE



4' Flush Lens
Nominal output:
250 Lumens per foot

Delivered Lumens: 1000lm
Total System Watts: 13W

Photometric performance is measured in accordance with IESNA LM-79.
Visit focalpointlights.com for complete photometric data.

PRODUCT OVERVIEW

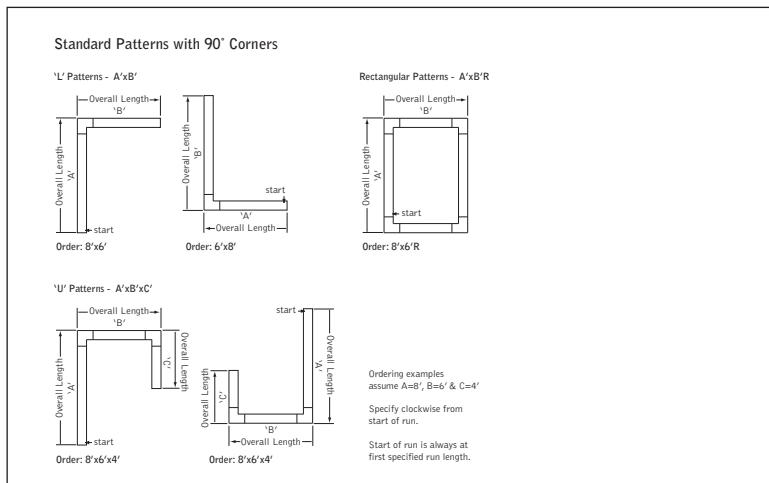
Lumen Output: 500-2500lm
Wattage: 5-47W
LPW: 53-96
SDCM: 3
Reported Lumen L70 @
Maintenance: >60,000hrs

fixture:

project:

TYPE FJ

DETAILS



SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. LEDs are placed to promote a uniform appearance. Available in 3000K, 3500K, 4000K with CRI>80, 3SDCM. LED modules and drivers are replaceable from below.

Construction

One piece extruded aluminum housing. 20 Ga. steel end caps. Housing for new construction applications. 2' unit weight: 5.1 lbs., 3' unit weight: 7.6 lbs., 4' unit weight: 10.1 lbs., 5' unit weight: 12.6 lbs.

Optic

Reflectors fabricated of 22 Ga. steel finished in High Reflectance White powder coat. Extruded acrylic lens .07" thick with satin finish, up to 8' continuous.

Electrical

Luminaires are pre-wired with factory installed branch circuit wiring and over-molded quick connects. Standard 120-277V constant current driver includes 0-10V analog dimming. Power factor > .9.

Emergency Battery

IOTA CP-10. Emergency output - 10 watts for 90 minutes.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a multi-stage pre-treatment.

Lumen Maintenance

Calculated: L70 at 77,000 hours Reported: L70 at >60,000 hours
Derived from EPA TM-21 calculator based on 10,000 hours of test data.

Reliability

At Focal Point, our products are designed to stand the test of time. Each luminaire is engineered using superior components, manufactured with the utmost care and rigorously tested. Contact us for reliability data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

4' PERFORMANCE CHART

Shielding	Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
Flush Lens	125LF	500	5	96
	250LF	1000	13	80
	375LF	1500	19	79
Regress Lens	625LF	2500	33	76
	125LF	500	7	68
	250LF	1000	18	56
Regress High Performance Lens	375LF	1500	27	56
	625LF	2500	47	53
	125LF	500	6	89
Performance Lens	250LF	1000	14	72
	375LF	1500	21	72
	625LF	2500	36	69

*Based on 3500k, 4' lengths. *Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%

Focal Point LLC reserves the right to change specifications for product improvement without notification.

Seem 2 LED	FSM2L	
Shielding		
Flush Satin Lens	FL	
Regress Lens	SR	
(Housing height 5.5". Ceiling applications only)		
Regress High Performance Lens	SRXP	
(Housing height 5.5". Ceiling applications only)		
Lumen Output		
125 Lumens per foot	125LF	
(LD1, L11 & D11 only. 4' minimum.)		
250 Lumens per foot	250LF	
(Not available with LU5 & LH1. 4' minimum with D11 & FL lens)		
375 Lumens per foot	375LF	
(4' minimum with LU5 & LH1 and D11 with FL lens.)		
625 Lumens per foot	625LF	
(3' minimum with LU5 & LH1 Drivers)		
Color Temperature		
3000K	30K	
3500K	35K	
4000K	40K	
Circuit		
Single Circuit	1C	1C
Voltage		
120 Volt	120	
277 Volt	277	
UNV Volt	UNV	
(Cannot be specified with EM option)		
Driver		
(See driver reference for driver quantities)		
0-10V - 10% Dimming	LD	
0-10V - 1% Dimming	L11	
Lutron A-Series	L3D	
1% EcoSystem Digital		
(3' minimum with TF & TFW mounting. Consult factory for 3-wire control)		
Lutron H-Series 1% Dimming	LH1	
Lutron 5-Series	LU5	
5% EcoSystem Digital		
DALI 1% Dimming	D11	
Ceiling Configuration		
Std. 15/16" Lay-in	G1	
Std. 15/16" Tegular	T1	
Std. 9/16" Lay-in	G2	
Std. 9/16" Tegular	T2	
9/16" Slot-tee Tegular	G3	
Tall 15/16" Lay-in	G4	
Tall 15/16" Tegular	T4	
Tall 9/16" Lay-in	G5	
Tall 9/16" Tegular	T5	
Node 9/16" Tegular	T6	
Trim Flange Drywall	TF	
Trim Flange Wood	TFW	
Mud-in Trimless,	XF1	
pre-set for 1/2" Drywall		
Mud-in Trimless,	XF2	
pre-set for 5/8" Drywall		
Mud-in Trimless,	XFF	
set thickness in field		
(Mounting equipment assembled in field)		
Non-Drywall Hard Surface	XFN	
Hard Surface, Wood	XFW	
Factory Options		
Chicago Plenum	CP	
Emergency Circuit*	EC	
Emergency Battery Pack*	EM	
(4' lengths or longer)		
6' New York City Flex Whip	FNY	
6' Flex Whip	FW	
Finish		
Matte White Housing	WH	WH
Luminaire Length		
Specify luminaire/row length in 1" increments	X'	
(2' minimum length. Smaller increments available, consult factory.)		
Pattern Options		
(3' minimum length)		
'L' pattern	A' x B'	
'U' pattern	A' x B' x C'	
Rectangular pattern	A' x B' R	
(Consult factory for other pattern options)		

GC TO COORDINATE

9/16" Slot-tee Tegular G3

LENGTHS PER PLANS



*For more information visit focalpointlights.com/reference or consult factory. Quickship is a limited offering, visit focalpointlights.com/quickship for specifics.

Seem[®]2

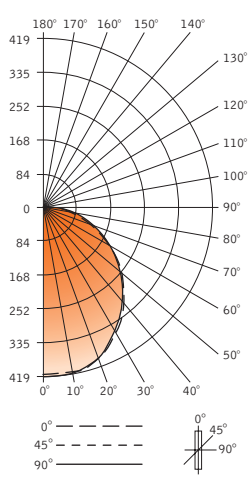
LED - FLUSH LENS

FSM2L-FL-250LF-35K-1C-120-LD1-G1-WH-4

Filename: FSM2LFL250LF35K.IES
Test #: 11482956.01

Lumens: 1155lm
System Watts: 13W
LPW: 85

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle				
	0°	22.5°	45°	67.5°	90°
0°	419	419	419	419	419
5°	416	420	417	417	417
15°	399	403	400	400	400
25°	367	369	365	364	364
35°	319	321	317	316	315
45°	262	264	261	260	259
55°	203	204	201	201	201
65°	140	142	141	141	141
75°	79	81	81	81	82
85°	25	25	25	25	26
90°	1	3	3	3	3
95°	0	0	0	0	0
105°	0	0	0	0	0
115°	0	0	0	0	0
125°	0	0	0	0	0
135°	0	0	0	0	0
145°	0	0	0	0	0
155°	0	0	0	0	0
165°	0	0	0	0	0
175°	0	0	0	0	0
180°	0	0	0	0	0

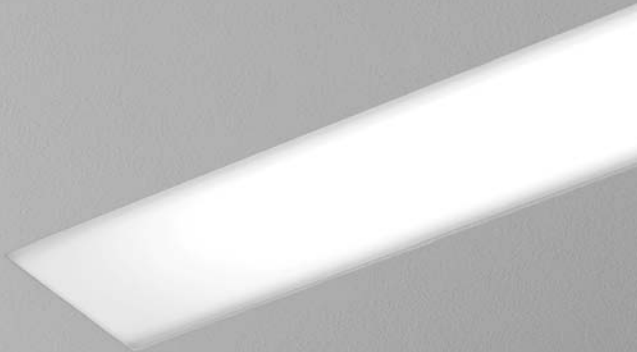
LUMEN SUMMARY

Zone	Lumens	% Fixture
0-40°	520	45.0
0-60°	902	78.1
0-90°	1155	100.0
Total Luminaire 0-180°	1155	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	4895	4867	4837
55°	4658	4637	4622
65°	4373	4397	4400
75°	4044	4108	4156
85°	3776	3794	3860

Go to www.focalpointlights.com for additional photometric data.



trimless mud-in



trim flange



grid



end detail



corner detail



regress lens



wall to ceiling companion



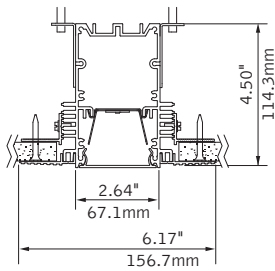
perimeter companion



suspended & wall mount companions

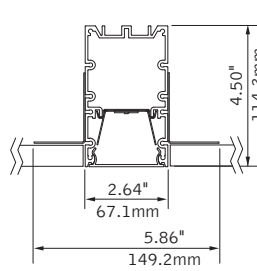
DIMENSIONAL DATA

trimless mud-in



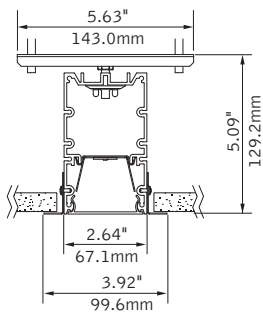
note: 0.375"min - 2.125"max ceiling thickness

hard surface

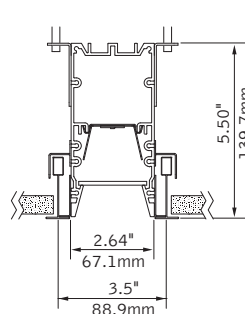


note: 0.375"min - 2.125"max ceiling thickness

trim flange



grid - regress lens shown



FEATURES

Narrow extruded aluminum 2.5" aperture recessed slot LED.

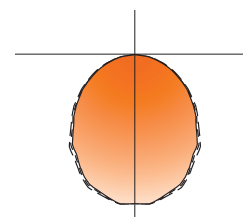
Integrates with ceiling or wall in a variety of mounting styles for a clean, unobtrusive aesthetic.

Individual units and continuous runs in 1" increments.

Frosted acrylic lens provides uninterrupted illumination, without pixels or shadows.

LED position and lens material optimized to provide the perfect blend of high performance and visual comfort.

PERFORMANCE



4' Flush Lens
Nominal output:
250 Lumens per foot

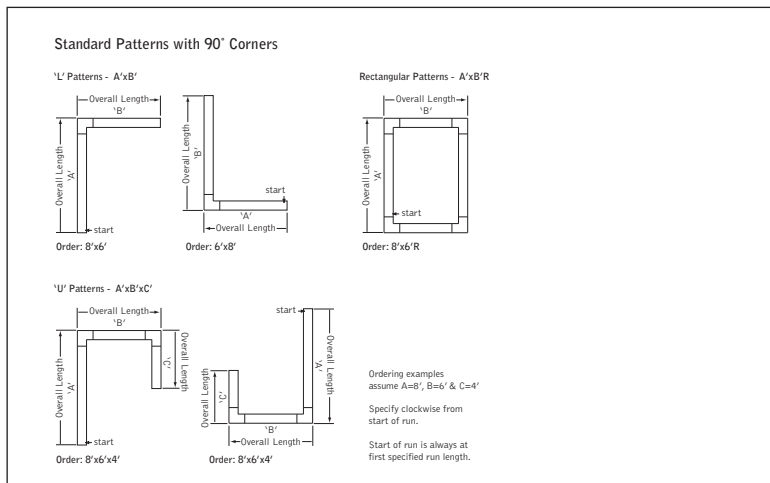
Delivered Lumens: 1000lm
Total System Watts: 13W

Photometric performance is measured in accordance with IESNA LM-79.
Visit focalpointlights.com for complete photometric data.

PRODUCT OVERVIEW

Lumen Output: 500-2500lm
Wattage: 5-47W
LPW: 53-96
SDCM: 3
Reported Lumen L70 @
Maintenance: >60,000hrs

DETAILS



SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. LEDs are placed to promote a uniform appearance. Available in 3000K, 3500K, 4000K with CRI>80, 3SDCM. LED modules and drivers are replaceable from below.

Construction

One piece extruded aluminum housing. 20 Ga. steel end caps. Housing for new construction applications. 2' unit weight: 5.1 lbs., 3' unit weight: 7.6 lbs., 4' unit weight: 10.1 lbs., 5' unit weight: 12.6 lbs.

Optic

Reflectors fabricated of 22 Ga. steel finished in High Reflectance White powder coat. Extruded acrylic lens .07" thick with satin finish, up to 8' continuous.

Electrical

Luminaires are pre-wired with factory installed branch circuit wiring and over-molded quick connects. Standard 120-277V constant current driver includes 0-10V analog dimming. Power factor > .9.

Emergency Battery

IOTA CP-10. Emergency output - 10 watts for 90 minutes.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only.

Finish

Polyester powder coat applied over a multi-stage pre-treatment.

Lumen Maintenance

Calculated: L70 at 77,000 hours Reported: L70 at >60,000 hours
Derived from EPA TM-21 calculator based on 10,000 hours of test data.

Reliability

At Focal Point, our products are designed to stand the test of time. Each luminaire is engineered using superior components, manufactured with the utmost care and rigorously tested. Contact us for reliability data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

4' PERFORMANCE CHART

Shielding	Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
Flush Lens	125LF	500	5	96
	250LF	1000	13	80
	375LF	1500	19	79
	625LF	2500	33	76
Regress Lens	125LF	500	7	68
	250LF	1000	18	56
	375LF	1500	27	56
	625LF	2500	47	53
Regress High Performance Lens	125LF	500	6	89
	250LF	1000	14	72
	375LF	1500	21	72
	625LF	2500	36	69

*Based on 3500k, 4' lengths. *Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%

Focal Point LLC reserves the right to change specifications for product improvement without notification.

Seem 2 LED	FSM2L	
Shielding		
Flush Satin Lens	FL	
Regress Lens	SR	
(Housing height 5.5'. Ceiling applications only)		
Regress High Performance Lens	SRXP	
(Housing height 5.5'. Ceiling applications only)		
Lumen Output		
125 Lumens per foot	125LF	
(LD1, L11 & D11 only. 4' minimum.)		
250 Lumens per foot	250LF	
(Not available with LU5 & LH1. 4' minimum with D11 & FL lens)		
375 Lumens per foot	375LF	
(4' minimum with LU5 & LH1 and D11 with FL lens.)		
625 Lumens per foot	625LF	
(3' minimum with LU5 & LH1 Drivers)		
Color Temperature		
3000K	30K	
3500K	35K	
4000K	40K	
Circuit		
Single Circuit	1C	1C
Voltage		
120 Volt	120	
277 Volt	277	
UNV Volt	UNV	
(Cannot be specified with EM option)		
Driver		
(See driver reference for driver quantities)		
0-10V - 10% Dimming	LD	
0-10V - 1% Dimming	L11	
Lutron A-Series	L3D	
1% EcoSystem Digital		
(3' minimum with TF & TFW mounting. Consult factory for 3-wire control)		
Lutron H-Series 1% Dimming	LH1	
Lutron 5-Series	LU5	
5% EcoSystem Digital		
DALI 1% Dimming	D11	
Ceiling Configuration		
Std. 15/16" Lay-in	G1	
Std. 15/16" Tegular	T1	
Std. 9/16" Lay-in	G2	
Std. 9/16" Tegular	T2	
9/16" Slot-tee Tegular	G3	
Tall 15/16" Lay-in	G4	
Tall 15/16" Tegular	T4	
Tall 9/16" Lay-in	G5	
Tall 9/16" Tegular	T5	
Node 9/16" Tegular	T6	
Trim Flange Drywall	TF	
Trim Flange Wood	TFW	
Mud-in Trimless, pre-set for 1/2" Drywall	XF1	
Mud-in Trimless, pre-set for 5/8" Drywall	XF2	
Mud-in Trimless, set thickness in field	XFF	
(Mounting equipment assembled in field)		
Non-Drywall Hard Surface	XFN	
Hard Surface, Wood	XFW	
Factory Options		
Chicago Plenum	CP	
Emergency Circuit*	EC	
Emergency Battery Pack*	EM	
(4' lengths or longer)		
6' New York City Flex Whip	FNY	
6' Flex Whip	FW	
Finish		
Matte White Housing	WH	WH
Luminaire Length		
Specify luminaire/row length in 1" increments	X'	
(2' minimum length. Smaller increments available, consult factory.)		
Pattern Options		
(3' minimum length)		
'L' pattern	A' x B'	
'U' pattern	A' x B' x C'	
Rectangular pattern	A' x B' R	
(Consult factory for other pattern options)		

GC TO COORDINATE

Mud-in Trimless, set thickness in field
(Mounting equipment assembled in field)

LENGTHS PER PLANS



*For more information visit focalpointlights.com/reference or consult factory. Quickship is a limited offering, visit focalpointlights.com/quickship for specifics.

Seem[®]2

LED - FLUSH LENS

FSM2L-FL-250LF-35K-1C-120-LD1-G1-WH-4

Filename: FSM2LFL250LF35K.IES

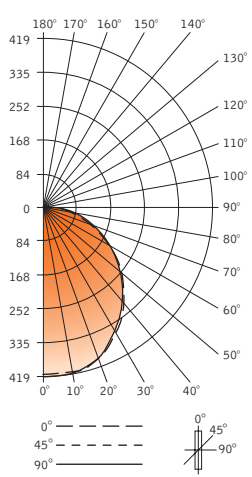
Test #: 11482956.01

Lumens: 1155lm

System Watts: 13W

LPW: 85

CANDLEPOWER DISTRIBUTION



Vertical Angle	Horizontal Angle				
	0°	22.5°	45°	67.5°	90°
0°	419	419	419	419	419
5°	416	420	417	417	417
15°	399	403	400	400	400
25°	367	369	365	364	364
35°	319	321	317	316	315
45°	262	264	261	260	259
55°	203	204	201	201	201
65°	140	142	141	141	141
75°	79	81	81	81	82
85°	25	25	25	25	26
90°	1	3	3	3	3
95°	0	0	0	0	0
105°	0	0	0	0	0
115°	0	0	0	0	0
125°	0	0	0	0	0
135°	0	0	0	0	0
145°	0	0	0	0	0
155°	0	0	0	0	0
165°	0	0	0	0	0
175°	0	0	0	0	0
180°	0	0	0	0	0

LUMEN SUMMARY

Zone	Lumens	% Fixture
0-40°	520	45.0
0-60°	902	78.1
0-90°	1155	100.0
Total Luminaire 0-180°	1155	100.0

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal		
	0°	45°	90°
45°	4895	4867	4837
55°	4658	4637	4622
65°	4373	4397	4400
75°	4044	4108	4156
85°	3776	3794	3860

Go to www.focalpointlights.com for additional photometric data.

SUFFUSE LED

TYPE KC/CONT

HOUSING

THE 3 1/2" INCH NOMINAL DEEP HSG TO BE FORMED FROM 20GA CRS. FINISHED BAKED WHITE ENAMEL (STANDARD) ALL FIXTURES ARE PRE-WIRED. ALL STEEL PARTS ARE PHOSPHATE TREATED FOR CORROSION RESISTANCE BEFORE PAINT PROCEDURE, THEN BAKED WITH SUPERIOR ADHESION FOR DURABILITY.

LED MODULES

HIGHER EFFICACY UP TO 170 LPW WITH SERVICE LIFE GREATER THAN 60000(L70) HIGH COLOR RENDER AND EXCELLENT COLOR CONSISTENCY COLOR OPTIONS AVAILABLE FROM 27K TO 40K . 90 CRI LEDS AVAILABLE AS OPTIONAL

DRIVERS

CONSTANT CURRENT, CLASS 2
UNIVERSAL INPUT : 120-277VAC
SOUND RATED A, 54V OUTPUT 0-10V
DIMMING STANDARD . DALI, ECOSYSTEM AND DMX DRIVERS ALSO AVAILABLE

REFLECTOR

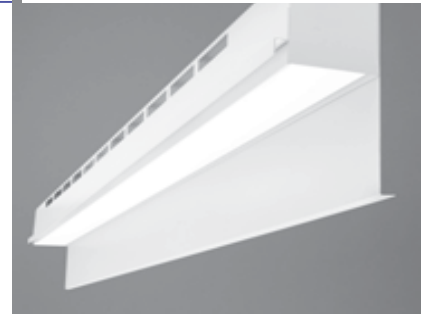
TO BE FORMED FROM 20GA CRS
FINISH: BAKED WHITE ENAMEL WITH 90% REFLECTIVITY

MOUNTING

RECESSED MOUNTED
SEE OPTIONS IN THE ORDERING KEY

PRODUCT DESCRIPTION

THE SUFFUSE LED INTEGRATES HIGH EFFICIENCY CONSTANT CURRENT LED TECHNOLOGY WITH A UNIQUE APPROACH TO LINEAR WALL WASHING AND GRAZING. THE ADVANCED DESIGN OF THE OPTICAL SYSTEM LED EMITS UNIFORM LIGHTING AND ILLUMINATES SHADOWS AND DARK CORNERS, DELIVERING CONTINUOUS UNINTERRUPTED LIGHT. 90° CORNERS, ARE AVAILABLE TO COMPLETE ANY CONFIGURATION OF FIXTURES.



TYPE:

PROJECT:

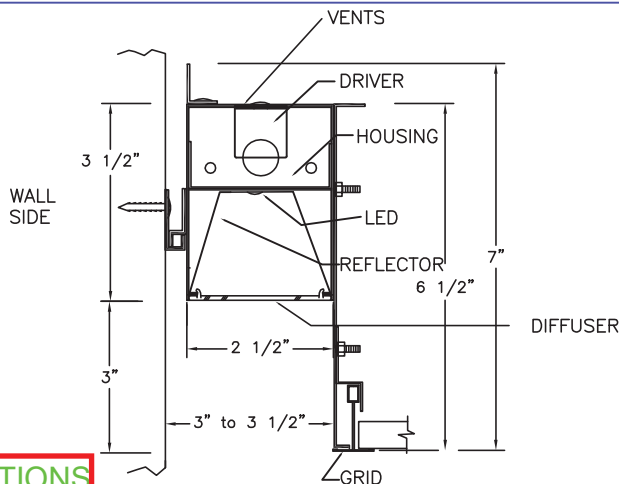
EVEN AND VISUALLY COMFORTABLE LED LIGHT DISTRIBUTION ACROSS PROFILE OF THE PRODUCT

50% ENERGY SAVINGS COMPARED TO LINEAR FLUORESCENT

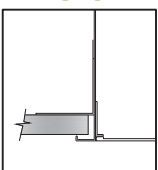
SUSTAINABLE MATERIALS

ARRAY OF LUMEN OPTIONS ALL LM79/LM80 UL APPROVED

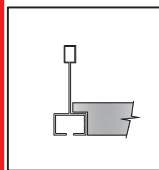
5 YEAR WARRANTY LED AND DRIVER



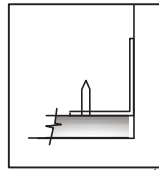
CEILING OPTIONS



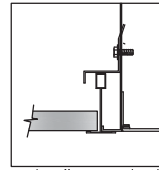
FLANGE



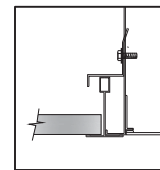
SLOT GRID



FLANGELESS(FO)



9/16" GRID (T1)



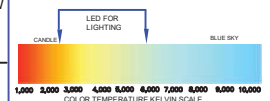
GRID (T)

ORDERING KEY

SERIES	LUMENS/ft (W/ft)	LENGTH	COLOR TEMP	MOUNTING	VOLTAGE	OPTIONS
SUFFUSE LED	LO 471(7.5)	<input type="checkbox"/> 2'	<input type="checkbox"/> 2700K	<input type="checkbox"/> T1 9/16	<input type="checkbox"/> 120 V	<input type="checkbox"/> EM
	MQ 612(9.5)	<input type="checkbox"/> 3'	<input checked="" type="checkbox"/> 3000K	<input type="checkbox"/> T	<input type="checkbox"/> 277 V	<input checked="" type="checkbox"/> DIM 0-10
	HO 918.25(12.5)	<input type="checkbox"/> 4'	<input type="checkbox"/> 3500K	<input checked="" type="checkbox"/> F	<input type="checkbox"/> UNV	<input type="checkbox"/> DALI
		<input type="checkbox"/> 6'	<input type="checkbox"/> 4000K	<input type="checkbox"/> SG		<input type="checkbox"/> Hilume 1%2 Wire-LTEA2W
		<input type="checkbox"/> 8'	<input type="checkbox"/> 5000K	<input type="checkbox"/> FO		<input type="checkbox"/> Hilume 1% Eco-LDE1
		<input type="checkbox"/> ROWS				<input type="checkbox"/> Hilume 5% LDE5

LUMENS WILL VARY DEPENDING ON DIFFUSER AND LED COLOR TEMP.

NATIONAL 3E/LED SERIES USES ENGINE/STICK ORIGINAL EQUIPMENT (BY OSRAM, PHILIPS, SAMSUNG, ET AL) WHICH ARE RATED FOR APPROXIMATELY 100 LM/W. ARCHITECTURAL LENSES PROVIDED WITH THE LUMINAIRES BY DESIGN EVEN THE BRIGHTNESS AND VISUAL COMFORT AND MIGHT FRACTIONALLY LOWER LM/W.



522 CORTLANDT ST.
BELLEVILLE, NJ 07109

NJ 973-751-1600
NY 212-751-1600
FAX 973-751-4931
WWW.NATLTG.COM

Modules and drivers are UL recognized components and RoHS compliant. LED modules also comply with IENSA LM-79 and LM-80 standards.

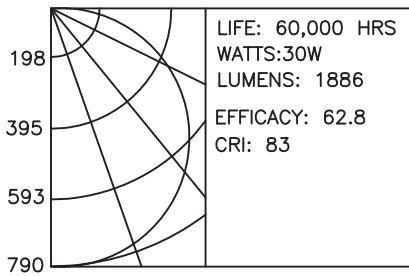


SUFFUSE LED

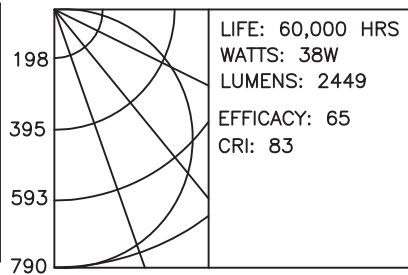
TYPE KC/CONT

PHOTOMETRIC REPORT

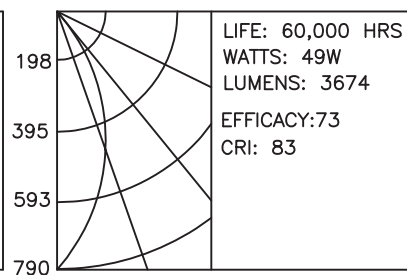
SUFFUSE-LED-LO



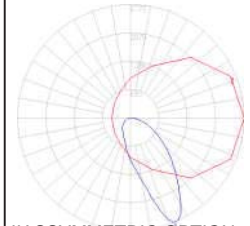
SUFFUSE-LED-MO



SUFFUSE-LED-HO



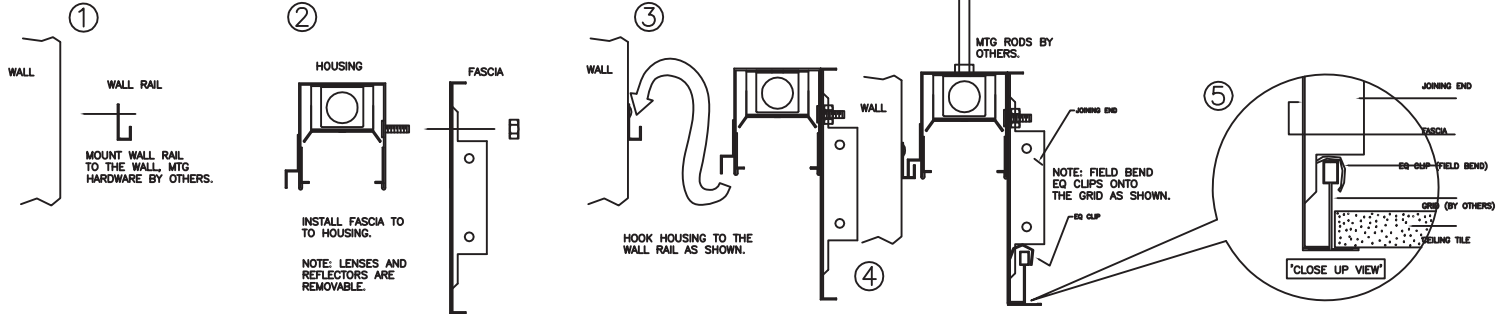
SUFFUSE-LED-ASY



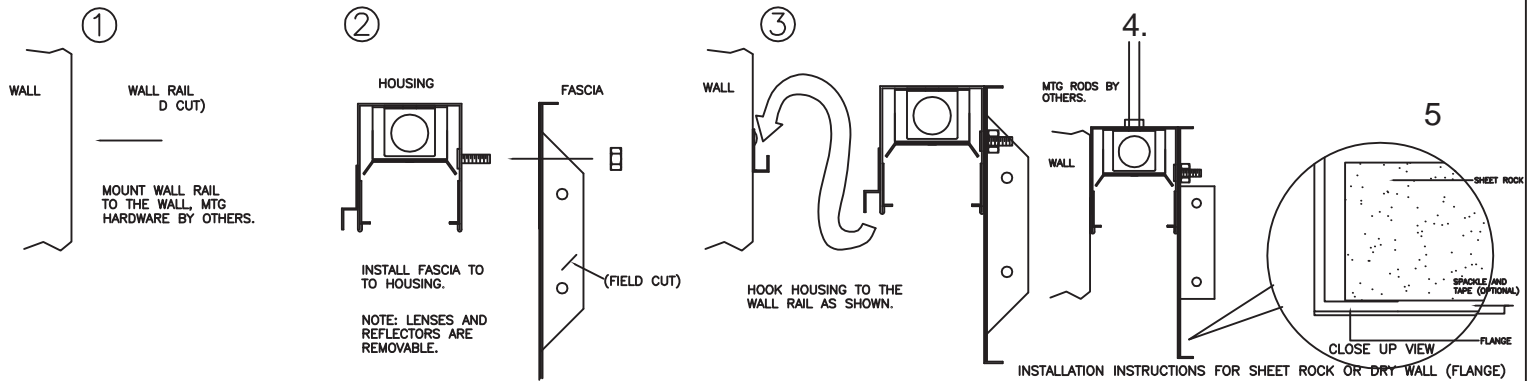
!!ASYMMETRIC OPTION AVAILABLE
PLEASE CONTACT NATIONAL.

INSTALLATION INSTRUCTIONS

GRID INSTRUCTIONS



FLANGED/ GYPBOARD CEILING



LIGHTING CONTROL SOLUTIONS

1. DIMMING (0-10V, DALI Or Lutron)
 - 0-10V Dimming Driver used as standard.
 - Continuous Dimming up to 10%.
 - Dimming wires not provided unless specified
 - Contact National for Dali or Lutron Control system
2. Occ/DAYLIGHT/Vacancy/Bi-Level
 - Sensor-ready and compatible drivers provided.
 - Sensors can be field installed or could be installed in the fixtures
 - Bi-level dimming and Motion sensors also available
3. Compatibility:
 - National fixtures are compatible with Lutron, Philips Actilume, Magnum, Wattstopper, Hubbell , Leviton , Hytronik , Daintree & Enlighted Control System

APPLICATION PICTURE



NATIONAL LIGHTING
COMPANY, INC.
522 CORTLANDT ST.
BELLEVILLE, NJ 07109

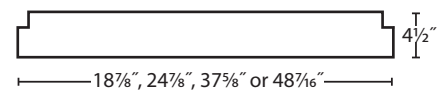
NJ 973-751-1600
NY 212-751-1600
FAX 973-751-4931
WWW.NATLTG.COM

JOB NAME:
CATALOG:
TYPE:



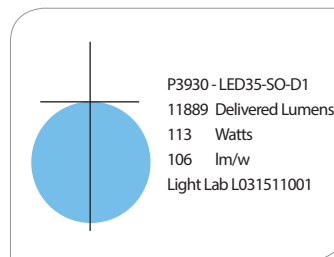
Type:

Job:



A top-selling classic.

Hand-spun steel housing with a soft radius edge. Often partnered with our P8900 recessed rounds. Compare with our new P4000. Twenty one premium colors (no set-up fee).



P3930 - LED35-SO-D1
11889 Delivered Lumens
113 Watts
106 lm/w
Light Lab L031511001



Note: P3900 and P4000 use the same IES tests

LUMEN OUTPUT: Direct (D1)

	LOW	MED	STD	HIGH
18" : lm	950	1650	1950	2150
w	19	33	39	47
2' : lm	2100	3150	3900	4100
w	35	54	67	73
3' : lm	5800	9100	11889	17700
w	56	87	113	177
4' : lm	9200	11500	18200	28000
w	88	110	174	281

Lumen output may vary +/- 5%
4000K used for lm/ft estimates above
3500K -2% If, 3000K -4%, 2700K -6%
See LED Details PDF for more info

D9 ON NEXT PAGE

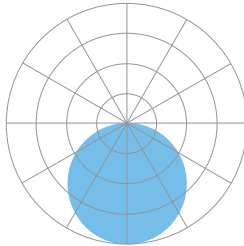
SERIES	LED COLOR	OUTPUT	SHIELDING	COLOR/ FINISH	DISTRI- BUTION	CIRCUIT- ING	VOLT- AGE	MOUNTING	CEILING SYSTEMS	DRIVERS	OPTIONS & CONTROLS
P3918 18" Dia.	LED27 2700K	LO Low MO Medium	FWA Flat White Acrylic Lens	TMW Textured Matte White	D1 Direct	SC Single Circuit	UNV (120- 277)	SUR Surface Mount (Standard)	X1 T-Bar Exposed	ND Non-Dimming DM10 0-10v, 10% Dimming (Standard)	EML Emergency Battery, Low (P3918: 400; P3920: 500; P3930 & P3940: 900 delivered lumens)
P3920 2" Dia.	LED3 3000K	SO Standard	VVA Convex White Acrylic Lens (1" Max Drop)	YGW Gloss White (Standard)	D9 Semi- Direct (20-30% uplight, NA Surface)	DC Dual Circuit (D9 only)	347 (Emer- gency battery requires a Step Down trans- former)	MPCA Monopoint Mounting (For 18" & 2'- 9" min. from fixt. to ceiling, for 3' & 4' fixt. 18" from fixt. to ceiling.)	X3 Hard Ceiling	DM01 0-10v, 1% Dimming STEP Step Dimming, 100-50-Off, Osram NOTE: Lumens and watts per foot may differ for STEP drivers, consult factory	EMH Emergency Battery, High (NA - 18" and 2", P3930 & P3940: 1250 delivered lumens)
P3930 3" Dia.	LED35 3500K	HO High		Y Premium Color	NOTE: 18", 2" NA - D9 LO			CA48", 96" or 144" Aircraft Cable (Adjustable)	X6 Slot Grid	LDES 5%, Lutron (Ecosystem) LDE1 1%, Lutron (Soft Fade to Black, Ecosystem)	IBC Insulated Braided Cord
P3940 4" Dia.	LED4 4000K	PROG Program- mable Light Output (Specify desired lm or w/ fixture) NOTE: Specify separate output Down/Up if desired e.g. HO/ LO (D9 only)		CC Custom Color NOTE: Top plate is always Gloss White for optical per- formance				SSC Top-Swivel Stem Mount for Hard Ceilings (Specify length in inches) NOTE: P3918 SUR or MPCA only		L3DA 1%, Lutron, 3 Wire ECO 1% 0-10v, EldoLED ECDA 1% DALI, EldoLED SOLO 0.1% 0-10v, EldoLED (Dim to Dark) SODA 0.1% DALI, EldoLED (Dim to Dark)	PRUBIN Meticulous Binning and Labeling every LED Board within a 2-Step MacAdams Ellipse



D1

Standard Output:

P3930-LED35-SO-VWA-D1
11889 Delivered Lumens
113 Watts
106 lm/w
3500 CCT
Light Lab L031511001



Zonal Lumen Summary:

0-90 = 100%

4543

Vertical Angle	0	25	45	65	90
0	4543	4543	4543	4543	4543
5	4524	4524	4524	4524	4524
15	4353	4353	4353	4353	4353
25	4034	4034	4034	4034	4034
35	3584	3584	3584	3584	3584
45	2935	2935	2935	2935	2935
55	2081	2081	2081	2081	2081
65	1282	1282	1282	1282	1282
75	527	527	527	527	527
85	126	126	126	126	126
90	0	0	0	0	0

LUMEN OUTPUT:

Direct/Indirect (D9)



	LOW	MED	STD	HIGH	Uplight
18": lm	1400	2600	2900	3600	25%
w	23	42	47	58	
2': lm	3045	4200	5500	5750	25%
w	43	59	76	83	
3': lm	6100	9900	13000	19300	25%
w	59	95	125	194	
4': lm	10500	15000	20000	29500	25%
w	100	142	193	296	

D1 ON PREVIOUS PAGE

LUMEN MAINTENANCE

Designed to last with cool running mid-power LEDs projected to maintain 90% (L90) of their initial output for 100,000 hours (at HO), and L70 exceeding 150,000 hours.

LED SYSTEM LED modules and drivers are field replaceable.

PROG (optional) Programmable light output. Specify desired lumens or watts per fixture.

BINNING Standard binning (all Prudential LED boards) includes testing at the chip level and board integration to provide consistent color temperature within a 3-step MacAdam ellipse, with +/- 5% lumen output range and +/- .004 Duv.

PRUBIN™ (optional) Prudential Ltg's exclusive 'job binning' method that ensures color temperature consistency across all luminaires on a project. Meticulously testing and labeling EVERY LED BOARD to +/- 25 lumens, +/- 50k CCT and +/- .004 Duv — while also separating positive from negative — allows us to match color, hue and intensity throughout a project and provides a consistent color temperature within a 2-step MacAdam ellipse.

ELECTRICAL

Must specify LED dimming controls. LED fixtures have constant current driver(s) with less than 20% THD when loaded to a minimum of 60%. Drivers sink a maximum of 6mA per driver. DM10 LED drivers are 0-10V dimmable and are compatible with most 0-10V wall slide dimmers and direct 0-10V analog signal dimmers. Max driver size 2.38" w x 1.5" h.

CONSTRUCTION

Housing Spun 20 gauge steel, >20% PC recycled, 100% recyclable

Lens Convex (subtle drop mitigates lamp image) or flat acrylic, 100% recyclable

LABELS ETL damp labeled and I.B.E.W. manufactured

MOUNTING Surface or suspended by straight aircraft cables, top-swivel stems

WARRANTY Single-source, 5 year limited warranty covers standard components and construction





YSL - Silver	YPE - Pewter
YRG - Rain Grey	YST - Storm Grey
YSK - Sky	YDU - Dusk
YSA - Sapphire	YBB - Black
YDA - Daffodil	YSR - Sunset Red
YFG - Forest Green	YSN - Sand
YUM - Umber	YBR - Matte Bronze
YSW - Satin Seashell White	YIB - Matte Interstate Blue
YMB - Satin Military Blue	YBY - Matte Boysenberry
YIG - Satin Ivy Green	YCH - Metallic Champagne 303
YBK - Matte Interior Black Flat	

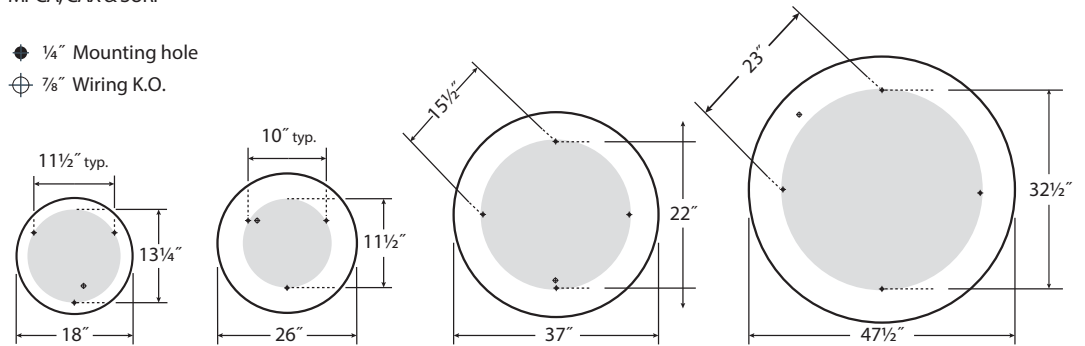


MOUNTING LOCATIONS

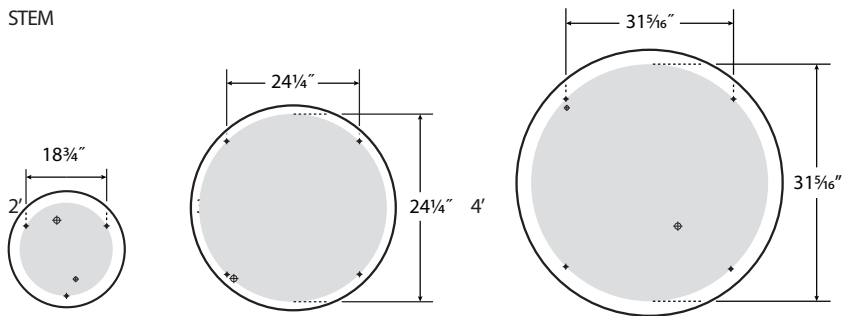
MPCA, CAX & SURF

◆ 1/4" Mounting hole

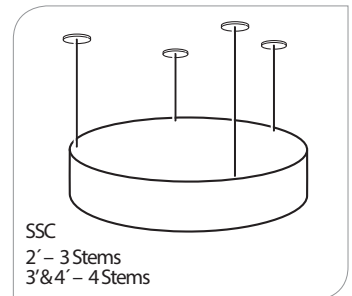
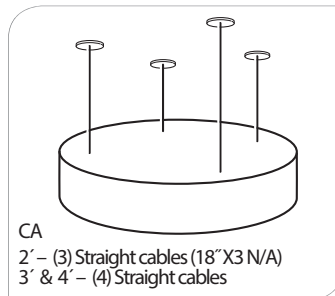
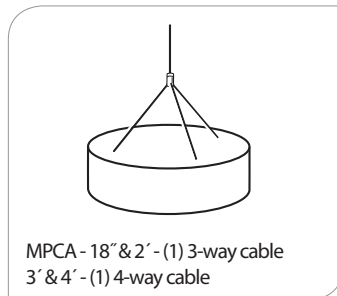
⊕ 7/8" Wiring K.O.



STEM



MOUNTING CABLES



Choose from one of our Premium Colors with no set-up fee.

For paint chip samples, please email: info@prulite.com



TYPE KO

CHANNEL WH35



Available in 1 and 2 meter lengths

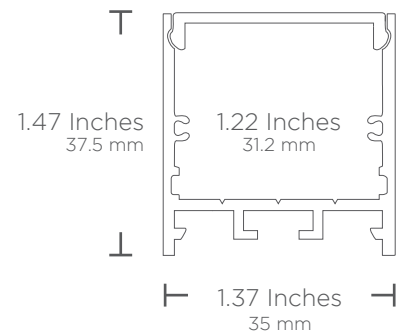
UV resistant

IP20 grade aluminum

Powdercoating available - will match color or use RAL #

56° beam angle

DIMENSIONS



PART NUMBER BUILDER for purchasing channel individually

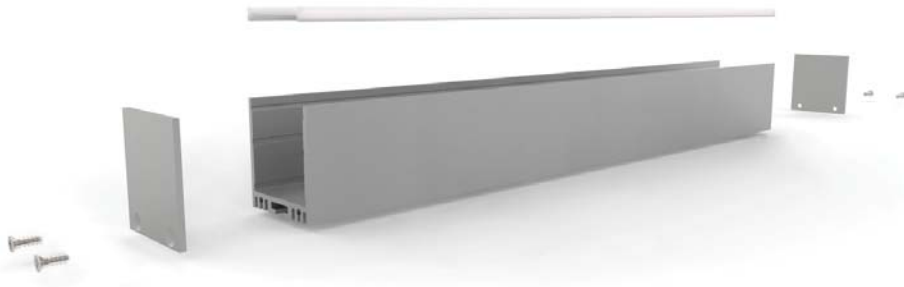
Category	Model	Length	Lens	=	Your Part Number
<input type="text" value="CH"/>	<input type="text" value="WH35"/>	<input type="text" value=""/>	<input type="text" value=""/>		Example: CHWH352F
		<div style="border: 1px solid red; padding: 2px;"> 1 - 1 Meter 2 - 2 Meter </div>	<div style="border: 1px solid red; padding: 2px;"> Blank - None M - Milky 70% F - Frosted 85% C - Clear 92% </div>		

PART NUMBER BUILDER for purchasing channel and ribbonlyte as a package

Category	Channel Model	Channel Lens	LED Voltage	LED Waterproof Rating	+	
<input type="text" value="CH"/>	<input type="text" value="WH35"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>		
		Blank - None M - Milky 70% F - Frosted 85% C - Clear 92%	12 - 12 Volts 24 - 24 Volts	Blank - None 65 - IP65 68 - IP68		
LED Wattage	LED Color (Temp.)	Length	=			Your Part Number
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>				Example: CHWH351M124.42410
See RibbonLyte Section for Available Wattages	See RibbonLyte Section for Available Colors and Color Temperatures	Your Desired Length in Feet				

Rev. 2016.10.05

CHANNEL WH35



ACCESSORIES FOR WH35



End Cap
CHCAPWH35

Clear Lens
CHLENSWH351C
CHLENSWH352C

Milky Lens
CHLENSWH351M
CHLENSWH352M

Frosted Lens
CHLENSWH351F
CHLENSWH352F

Each channel section includes 2 Mounting Clips, 2 End Caps and 1 lens.

RIBBONLYTE COMPATIBILITY

The following RibbonLyte will fit in WH35 channel:

Non-Waterproof (IP20 + IP65)	Static White:	1.5	2.2	3.0	4.4	5.0	6.0	8.8
	Variable White:	3.0	VVA	VWR				
	Static Color:	1.5	2.2	3.0	4.4	5.0	6.0	8.8
	RGB:	2.2	4.4	RGBW	RGBA	RGBW + RGBA	8.8	
IP68	Static White:	1.5	2.2	3.0	4.4	5.0	6.0	8.8
	Variable White:	3.0	VVA	VWR				
	Static Color:	1.5	2.2	3.0	4.4	5.0	6.0	8.8
	RGB:	2.2	4.4	RGBW	RGBA	RGBW + RGBA	8.8	Addressable

Rev. 2016.10.05

TYPE KO

STATIC COLORS 1.5

RoHS
Compliant



Dry or wet location flexible LEDs

12 or 24 Volt

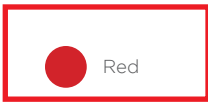
1.5 Watts per foot, 18 LEDs per foot

IP65 and IP68 versions are UV resistant

Red, amber, green, blue and UV

Cutable every 1.97 inches (12V) or 3.94 inches (24V)

Amber version is 590 nm; safe for wildlife preservation areas where proper wavelength of light is critical



Red



Amber



Green



Blue



UV



DIMENSIONS

1.5 - 12 Volt

LED on center: 0.65 Inches / 16.5 mm

Height: 0.088 Inches / 2.2 mm

Width: 0.31 Inches / 8 mm

Length between cuttable points: 1.97 Inches / 50 mm

1.5 - 24 Volt

LED on center: 0.65 Inches / 16.5 mm

Height: 0.088 Inches / 2.2 mm

Width: 0.31 Inches / 8 mm

Length between cuttable points: 3.94 Inches / 100mm

PART NUMBER BUILDER

Category

RB

+

Waterproof

+

Voltage

+

Wattage

1.5

+

Color

=

Your Part Number
Example: RB121.5A

65 - IP65
68 - IP68

Blank - None (IP20)

12 - 12V
24 - 24V

R - Red

A - Amber

G - Green

B - Blue

UV - Ultra Violet

Rev. 2016.09.19

STATIC COLORS 1.5

SPECIFICATIONS STATIC COLORS 1.5

Operating Voltage	12 Volt / 24 Volt
Power Consumption	1.5 Watts / Linear Foot
Amperage	12v: 125 mA / Foot 24v: 63 mA / Foot
Protection Rating	IP20/IP65/IP68
Dimming	Triac / 0-10 Volt / DMX / Lutron A-Series 1% dimming LED drivers
Operating Temperature	-40° C to 70° C
Color Temperature	Red, Amber, Green, Blue and UV
Lumen Output	Red: 33.93 lm/ft; Amber: 39.58 lm/ft; Green: 56.55 lm/ft; Blue: 16.97 lm/ft
Binning Tolerance	+/- 100K
LED Beam Angle	160°
Lamp Life	50,000 Hours
Cutttable	12v: Every 1.97" (50 mm) 24v: Every 3.94" (100 mm)
Lumens per Watt (per ft)	Red: 22.62 lm/W; Amber: 26.39 lm/W; Green: 37.70 lm/W; Blue: 11.31 lm/W
Constant Voltage	Yes
Maximum Run Length	IP20: 12V: 29' 6.3" (9 m) IP20: 24V: 68' 10.8" (21 m) IP65 + IP68: 12V: 29' 6.3" (9 m) IP65 + IP68: 24V: 32' 9.7" (10 m)
Dominant Wavelength	Red: 625 nm; Amber: 590 nm; Green: 520 nm; Blue: 465 nm; UV: 401.4 nm

DIMENSIONS STATIC COLORS 1.5

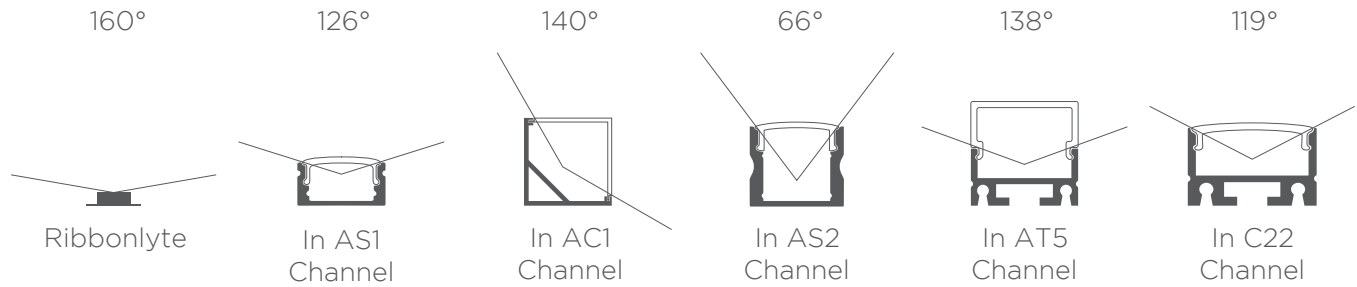
IP20 + IP65

Width	0.31" / 8 mm
Length	IP20: 12V: Up to 29' 6.3" (9 m); 24V: 68' 10.8" (21 m) IP65: 12V: Up to 29' 6.3" (9 m); 24V: 32' 9.7" (10 m)
Height	IP20: 0.088" / 2.2 mm IP65: 0.125" / 3.2 mm

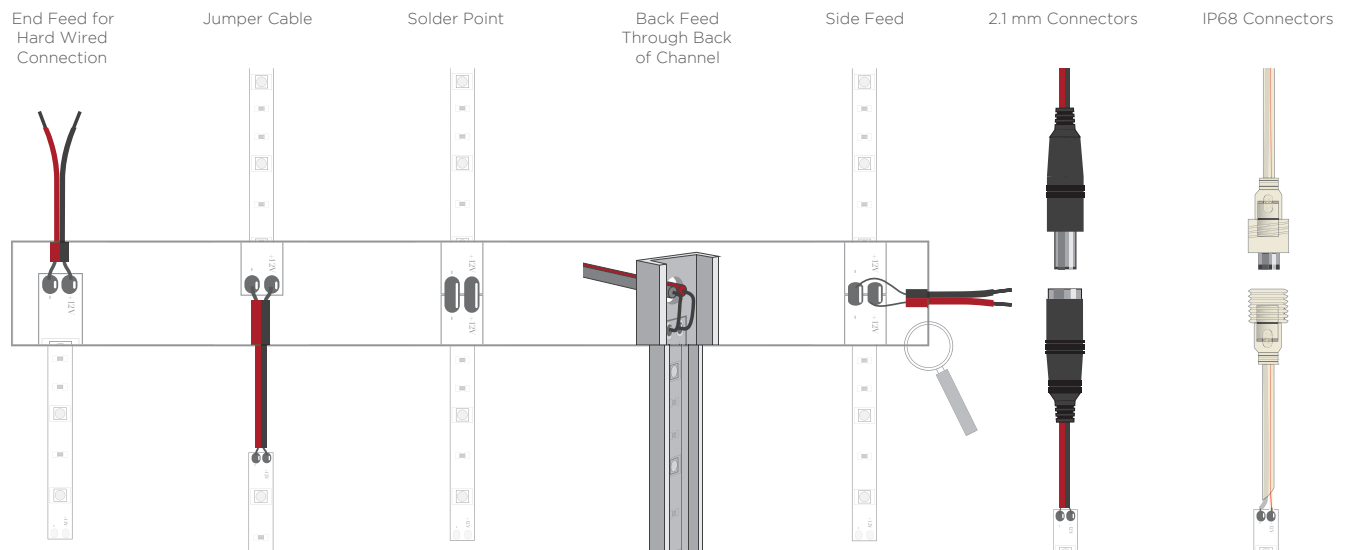
OUTDOOR - IP68

Width	0.41" / 10.4 mm
Length	12V: Up to 29' 6.3" (9 m); 24V: 32' 9.7" (10 m)
Height	0.18" / 4.5 mm

SAMPLE BEAM ANGLES



CONNECTION OPTIONS



CHANNEL COMPATIBILITY

Protection

Compatible Channels

Non-Waterproof (IP20)
+IP65

All Channel

IP68

All Channel

STATIC COLORS 1.5

USAGE GUIDELINES

Compatible with a wide variety of control products including the entire line of Lutron dimming systems.

For use with Acolyte drivers, triac dimming modules, 0-10 modules and interface controllers (DMXINF models).

Use with non-Acolyte triac, MLV or ELV drivers is not supported or warranted.

Due to the nature of the product, RibbonLyte cuttable lengths are generally longer or shorter than the customer requested length. Unless specified, RibbonLyte is factory cut at the shorter cuttable point.

IP65 and IP68 versions can be used in wet, outdoor locations around swimming pools and spa tubs, but not submerged in swimming pools and spa tubs.

We reserve the right to make changes to product lineup, specifications, design and finishes at any time without notice.

ACCESSORIES STATIC COLORS 1.5



CHANNEL
See Channel Guide



DRIVERS
See Drivers Guide



CONTROLLERS
See Controllers Guide



PARTS AND ACCESSORIES
See Parts and Accessories Guide

TYPE KO

STATIC COLORS RIBBONLYTE COMPARISON GUIDE

SPECIFICATIONS	1.5	2.2	3.0	4.4	5.0	6.0	8.8
Operating Voltage	12 V and 24 V versions						24 V
Power Consumption	1.5 W / Ft	2.2 W / Ft	3.0 W / Ft	4.4 W / Ft	5.0 W / Ft	6.0 W / Ft	8.8 W / Ft
Current (mA) - 12 V	125	183	250	366	416	500	--
Current (mA) - 24 V	63	92	125	183	208	250	367
Protection Rating	IP45, IP65 and IP68						
Beam Angle	160°						
Color Temperatures	Red, Amber, Green, Blue, UV						
LED's / Foot	18	9	36	18	15	72	36
Width - IP45 / IP65	0.31"	0.39"	0.31"	0.39"	0.44"	0.50"	0.59"
Width - IP68	0.41"	0.52"	0.41"	0.52"	0.54"	0.66"	0.77"
Cutable Length - 12 V	1.97"	3.94"	0.98"	1.97"	2.46"	0.98"	
Cutable Length - 24 V	3.94"	6.55"	1.97"	3.94"	4.92"	1.97"	1.97"
Max Length - 12 V	29' 6.3"	26' 3"	19' 8.2"	16' 5"	16' 5"	16' 5"	--
Max Length - 24 V	68' 10.8"	45' 10.3"	32' 9.7"	26' 3"	32' 9.7"	26' 3"	25' 7.1"
Max Length - IP65+IP68-12V	29' 6.3"	26' 3"	19' 8.2"	16' 5"	16' 5"	16' 5"	--
Max Length - IP65+IP68-24V	32' 9.7"	32' 9.7"	32' 9.7"	26' 3"	32' 9.7"	26' 3"	25' 7.1"
Lumen / Ft - Red	33.93	39.58	67.86	79.16	191.58	135.72	158.33
Lumen / Ft - Amber	39.58	56.55	79.16	113.10	141.3	158.33	226.20
Lumen / Ft - Green	56.55	84.82	113.10	169.65	325.74	226.19	339.30
Lumen / Ft - Blue	16.97	19.79	33.93	39.58	89.28	67.86	79.16
Lumen / Ft - UV	UV lumen data will be available on our website www.acolyteled.com						
Lumens / Watt - Red	22.62	17.99	22.62	17.99	38.31	22.62	17.99
Lumens / Watt - Amber	26.39	25.70	26.39	25.70	28.26	26.39	25.70
Lumens / Watt - Green	37.70	38.55	37.70	38.55	65.15	37.70	38.55
Lumens / Watt - Blue	11.31	9.00	11.31	9.00	17.85	11.31	9.00
Lumens / Watt - UV	UV lumen data will be available on our website www.acolyteled.com						
Dominant Wavelength - Red	625 nm						
Dominant Wavelength - Amber	590 nm						
Dominant Wavelength - Green	520 nm						
Dominant Wavelength - Blue	465 nm						
Dominant Wavelength - UV	401.4 nm						

TYPE KO

RIBBONLYTE 1.5

○ White

RoHS
Compliant



Dry or wet location flexible LEDs

12 or 24 Volt

1.5 Watts per foot, 18 LEDs per foot

IP65 and IP68 versions are UV resistant

2400K, 2700K, 3000K, 3500K, 4100K, and 6000K

Cuttable every 1.97 inches (12V) or 3.94 inches (24V)



DIMENSIONS

1.5 - 12 Volt

LED on center: 0.65 Inches / 16.5 mm

Height: 0.088 Inches / 2.2 mm

Width: 0.31 Inches / 8 mm

Length between cuttable points: 1.97 Inches / 50 mm

1.5 - 24 Volt

LED on center: 0.65 Inches / 16.5 mm

Height: 0.088 Inches / 2.2 mm

Width: 0.31 Inches / 8 mm

Length between cuttable points: 3.94 Inches / 100mm



PART NUMBER BUILDER

Category	CRI	Waterproof	Voltage	Wattage	Color / Temp.	
RB	Blank - Regular HI - High CRI	65 - IP65 68 - IP68 Blank - None (IP20)	12 - 12V 24 - 24V	1.5	24 - 2400K 27 - 2700K 30 - 3000K 35 - 3500K 41 - 4100K 60 - 6000K	Your Part Number Example: RB121.527

Rev. 2016.09.19

RIBBONLYTE 1.5

SPECIFICATIONS RIBBONLYTE 1.5

Operating Voltage	12 Volt / 24 Volt
Power Consumption	1.5 Watts / Linear Foot
Amperage	12v: 125 mA / Foot 24v: 63 mA / Foot
Protection Rating	IP20/IP65/IP68
Dimming	Triac / 0-10 Volt / DMX / Lutron A-Series 1% dimming LED drivers
Operating Temperature	-40° C to 70° C
Color Temperature	2400K, 2700K, 3000K, 3500K, 4100K and 6000K
Lumen Output	2400K: 122.2 lm/ft; 2700K: 118.8 lm/ft; 3000K: 129.0 lm/ft; 3500K: 127.1 lm/ft; 4100K: 131.2 lm/ft; 6000K: 139.7 lm/ft
Binning Tolerance	+/- 100K
LED Beam Angle	160°
Lamp Life	50,000 Hours
Cuttable	12v: Every 1.97" (50 mm) 24v: Every 3.94" (100 mm)
CRI	70-80 CRI for all color temperatures *CRI greater than 90 is available upon request
Lumens per Watt (per ft)	2400K: 81.5 lm/W; 2700K: 79.2 lm/W; 3000K: 86.0 lm/W; 3500K: 84.7 lm/W; 4100K: 87.5 lm/W; 6000K: 93.1 lm/W
Constant Voltage	Yes
Maximum Run Length	IP20: 12V: 29' 6.3" (9 m) IP20: 24V: 68' 10.8" (21 m) IP65 + IP68 12V: 29' 6.3" (9 m) IP65 + IP68 24V: 32' 9.7" (10 m)

DIMENSIONS RIBBONLYTE 1.5

IP20 + IP65

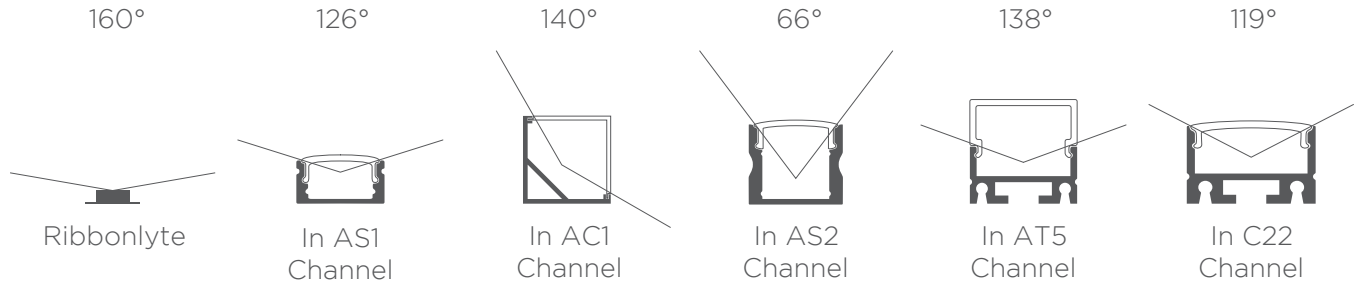
Width	0.31" / 8 mm
Length	IP20: 12V: Up to 29' 6.3" (9 m); 24V: Up to 68' 10.8" (21 m) IP65: 12V: Up to 29' 6.3" (9 m); 24V: Up to 32' 9.7" (10 m)
Height	IP20: 0.088" / 2.2 mm IP65: 0.125" / 3.2 mm

OUTDOOR - IP68

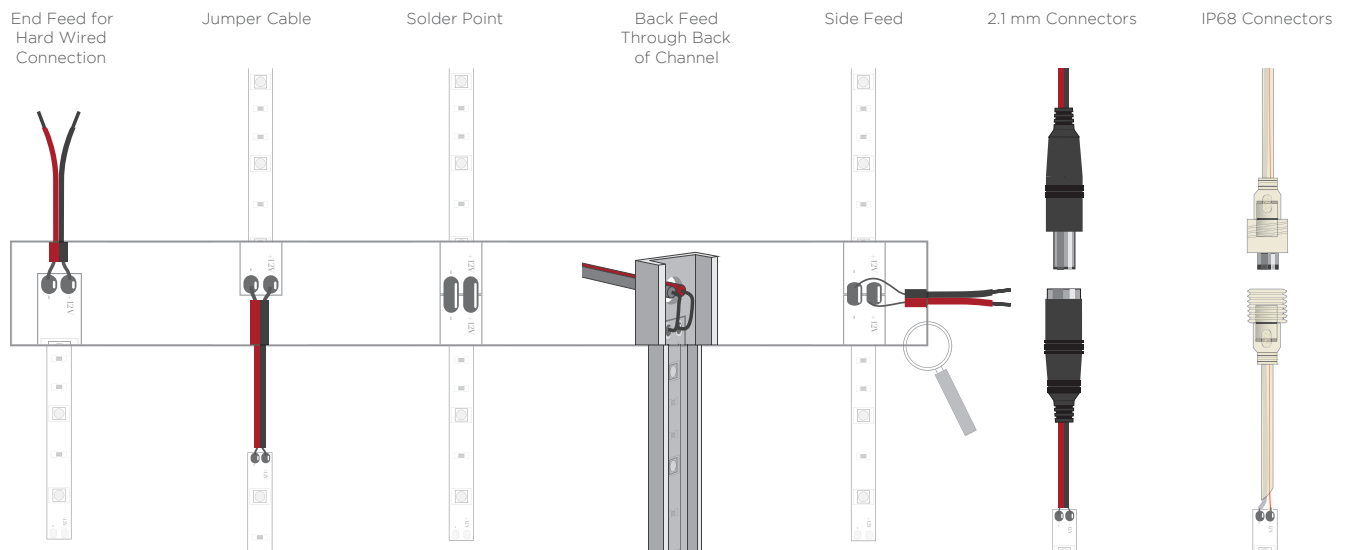
Width	0.41" / 10.4 mm
Length	12V: Up to 29' 6.3" (9 m); 24V: 32' 9.7" (10 m)
Height	0.18" / 4.5 mm

RIBBONLYTE 1.5

SAMPLE BEAM ANGLES



CONNECTION OPTIONS



CHANNEL COMPATIBILITY

Protection

Non-Waterproof (IP20)
+IP65

IP68

Compatible Channels

All Channel

All Channel

USAGE GUIDELINES

Compatible with a wide variety of control products including the entire line of Lutron dimming systems.

For use with Acolyte drivers, triac dimming modules, 0-10 modules and interface controllers (DMXINF models).

Use with non-Acolyte triac, MLV or ELV drivers is not supported or warranted.

Due to the nature of the product, RibbonLyte cuttable lengths are generally longer or shorter than the customer requested length. Unless specified, RibbonLyte is factory cut at the shorter cuttable point.

IP65 and IP68 versions can be used in wet, outdoor locations around swimming pools and spa tubs, but not submerged in swimming pools and spa tubs.

We reserve the right to make changes to product lineup, specifications, design and finishes at any time without notice.

ACCESSORIES RIBBONLYTE 1.5



CHANNEL
See Channel Guide



DRIVERS
See Drivers Guide



CONTROLLERS
See Controllers Guide



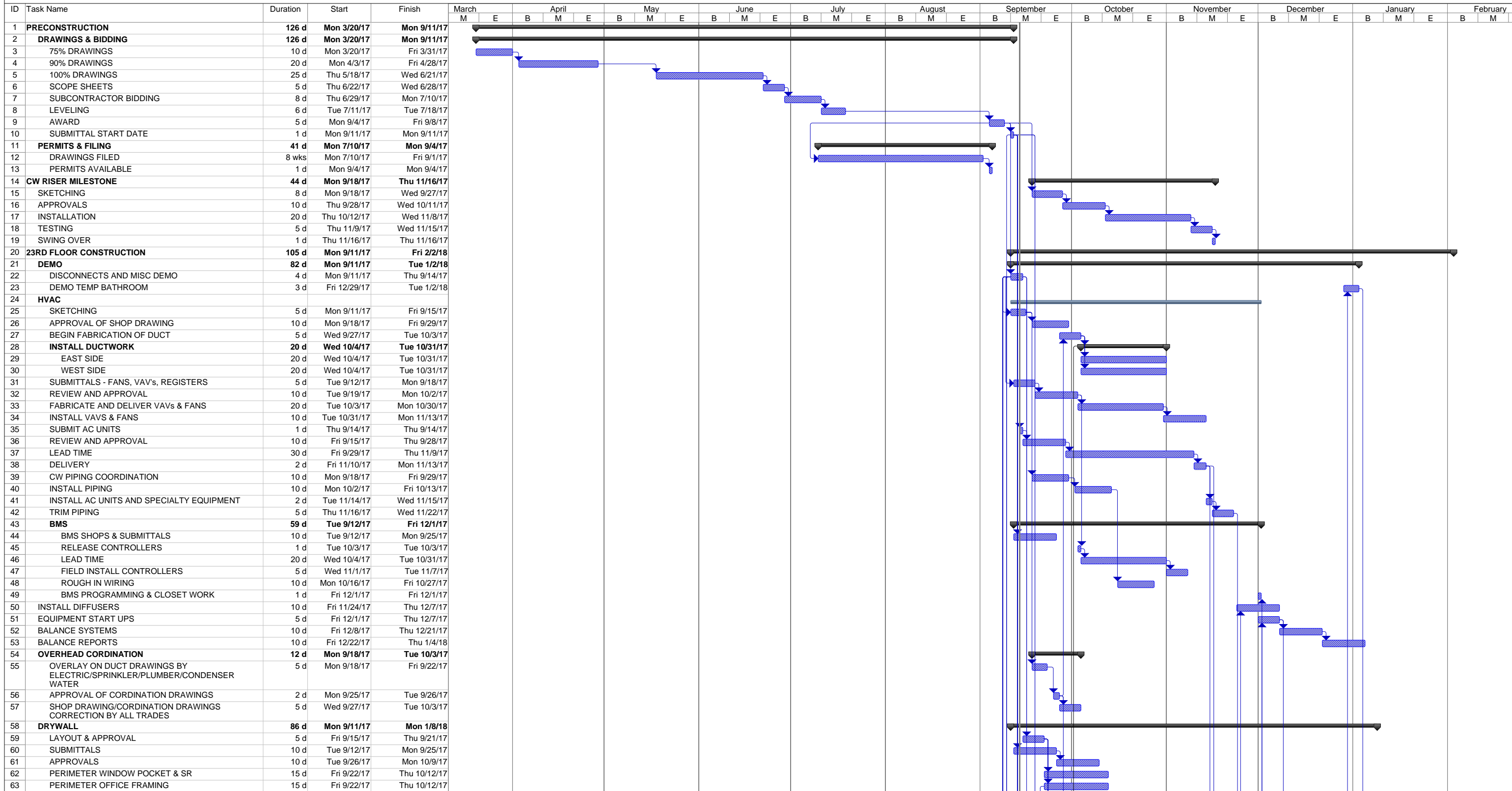
PARTS AND ACCESSORIES
See Parts and Accessories Guide

STATIC WHITE RIBBONLYTE COMPARISON GUIDE

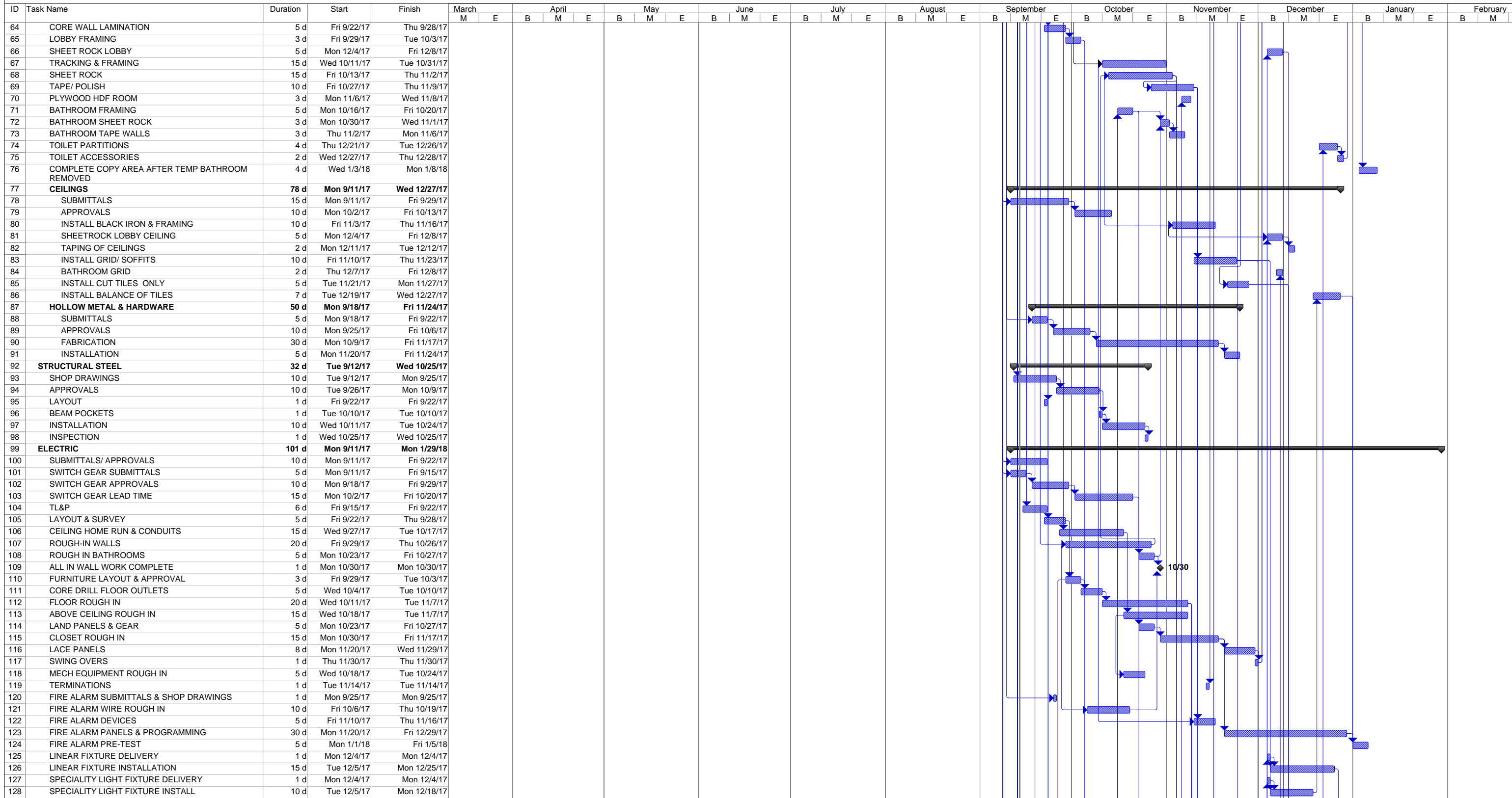
SPECIFICATIONS	1.5	2.2	3.0	4.4	5.0	6.0	8.8
Operating Voltage	12 V and 24 V versions						24 V
Power Consumption	1.5 W / Ft	2.2 W / Ft	3.0 W / Ft	4.4 W / Ft	5.0 W / Ft	6.0 W / Ft	8.8 W / Ft
Current (mA) - 12 V	125	183	250	366	417	500	--
Current (mA) - 24 V	63	92	125	183	208	250	367
Protection Rating	IP20, IP65, IP67 and IP68						
Beam Angle	160°						
Color Temperatures	2400K, 2700K, 3000K, 3500K, 4100K, 6000K						
LED's / Foot	18	9	36	18	15	72	36
Width - IP20 / IP45 / IP65	0.31"	0.39"	0.31"	0.39"	0.41"	0.50"	0.59"
Width - IP67 / IP68	0.41"	0.52"	0.41"	0.52"	0.54"	0.66"	0.77"
Cuttable Length - 12 V	1.97"	3.94"	0.98"	1.97"	2.46"	0.98"	--
Cuttable Length - 24 V	3.94"	6.55"	1.97"	3.94"	4.92"	1.97"	1.97"
Max Length - 12 V	29' 6.3"	26' 3"	19' 7.9"	16' 5"	16' 5"	16' 5"	--
Max Length - 24 V	68' 10.8"	45' 11.2"	32' 9.7"	26' 3"	32' 9.7"	26' 3."	25' 7.1"
Max Length IP65+IP68: 12V	29' 6.3"	26' 3"	19' 7.9"	16' 5"	16' 5"	16' 5"	--
Max Length IP65+IP68: 24V	32' 9.7"	32' 9.7"	32' 9.7"	26' 3"	16' 5"	23' 3"	25' 7.1"
Lumen / Ft - 2400 K	122.2	196.1	228.9	362.6	542.3	485.2	681.8
Lumen / Ft - 2700 K	118.8	193.6	234.0	352.7	506.5	463.5	730.3
Lumen / Ft - 3000 K	129.0	206.1	259.1	375.2	568.2	523.8	744.9
Lumen / Ft - 3500 K	127.1	221.7	252.4	416.5	576.2	550.0	801.7
Lumen / Ft - 4100 K	131.2	223.8	254.7	406.8	699.7	514.0	782.2
Lumen / Ft - 6000 K	139.7	207.0	281.5	378.4	619.6	537.5	765.7
Lumens / Watt - 2400 K	81.5	89.1	76.3	82.4	108.5	80.9	77.5
Lumens / Watt - 2700 K	79.2	88.0	78.0	80.2	101.3	77.3	83.0
Lumens / Watt - 3000 K	86.0	93.7	86.4	85.3	113.6	87.3	84.6
Lumens / Watt - 3500 K	84.7	100.8	84.1	94.7	115.2	91.7	91.1
Lumens / Watt - 4100 K	87.5	101.7	84.9	92.5	139.9	85.7	88.9
Lumens / Watt - 6000 K	93.1	94.1	93.8	86.0	123.9	89.6	87.0
CRI - All Color Temperatures	70-80 CRI						

*CRI greater than 90 is available upon request

APPENDIX 8
CONSTRUCTION SCHEDULE



Project: 23rd Floor-100CD_9-11 Start_REV#6-14SEP17 Date: Thu 9/14/17	Task	Rolled Up Task	Split	Group By Summary	Inactive Summary	Manual Summary Rollup	Finish-only	Progress
	Milestone	Rolled Up Milestone	External Tasks	Inactive Task	Manual Task	Manual Summary	Progress	
	Summary	Rolled Up Progress	Project Summary	Inactive Milestone	Duration-only	Start-only	Progress	

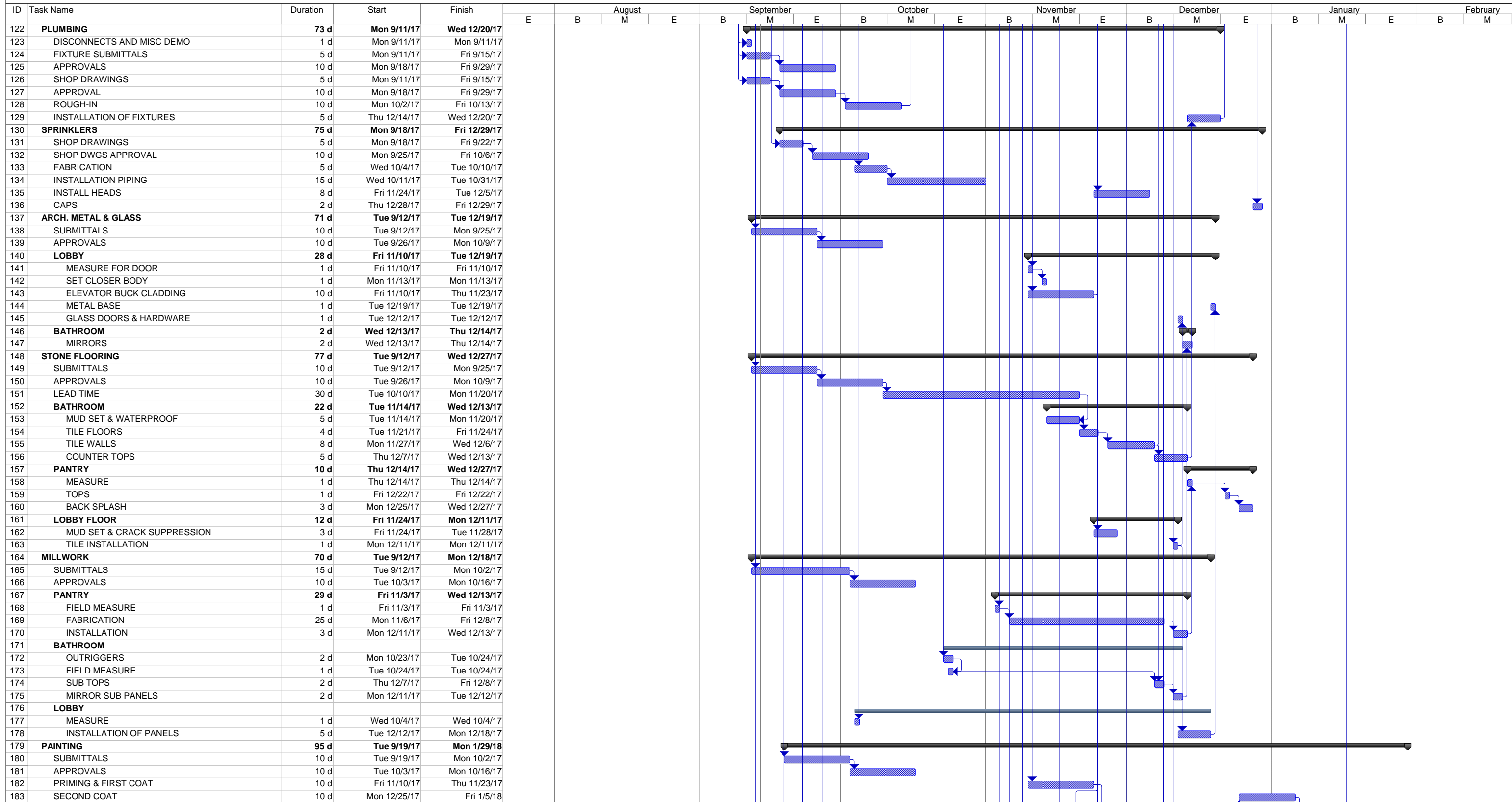


Project: 23rd Floor-100CD_9-11 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Task		Split		Group By Summary		Inactive Summary		Manual Summary Rollup		Manual Summary		Finish-only	
Milestone		Rolled Up Milestone		External Tasks		Inactive Task		Manual Task		Manual Summary		Manual Summary		Progress	
Summary		Rolled Up Progress		Project Summary		Inactive Milestone		Duration-only		Manual Summary		Manual Summary		Progress	

21ST FLOOR

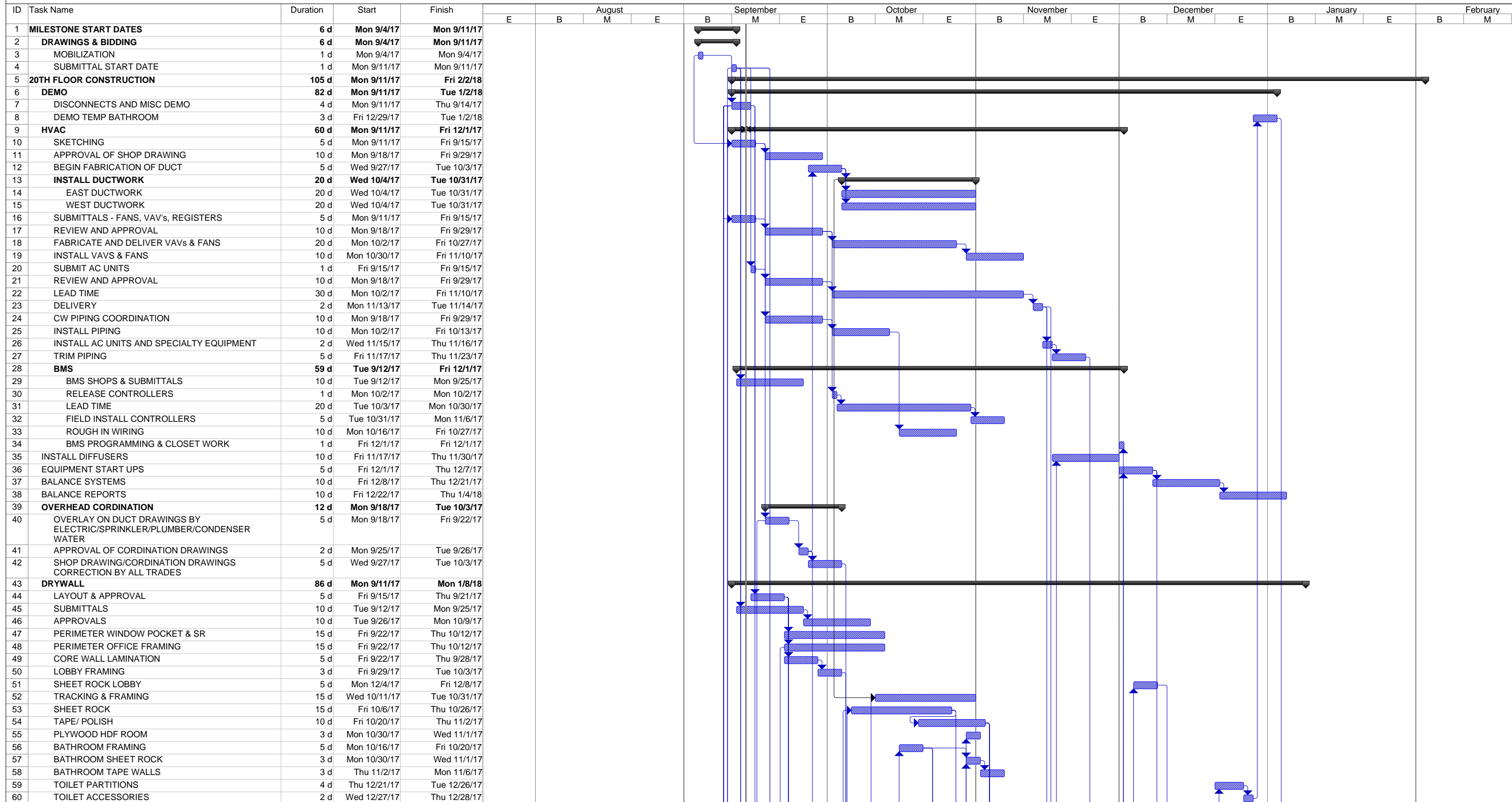
Rev.6 (9.14.2017)



Project: 21st Floor-90%CD's_9-11 Start_REV#6-14SEP17 Date: Thu 9/14/17	Task Rolled Up Milestone Project Summary Inactive Summary Manual Summary Manual Task Start-only Split Inactive Task Duration-only Finish-only Rolled Up Task External Tasks Inactive Milestone Manual Summary Rollup Progress
	Milestone Rolled Up Progress Group By Summary Manual Task Start-only Split Inactive Task Duration-only Finish-only Rolled Up Task External Tasks Inactive Milestone Manual Summary Rollup Progress

20TH FLOOR

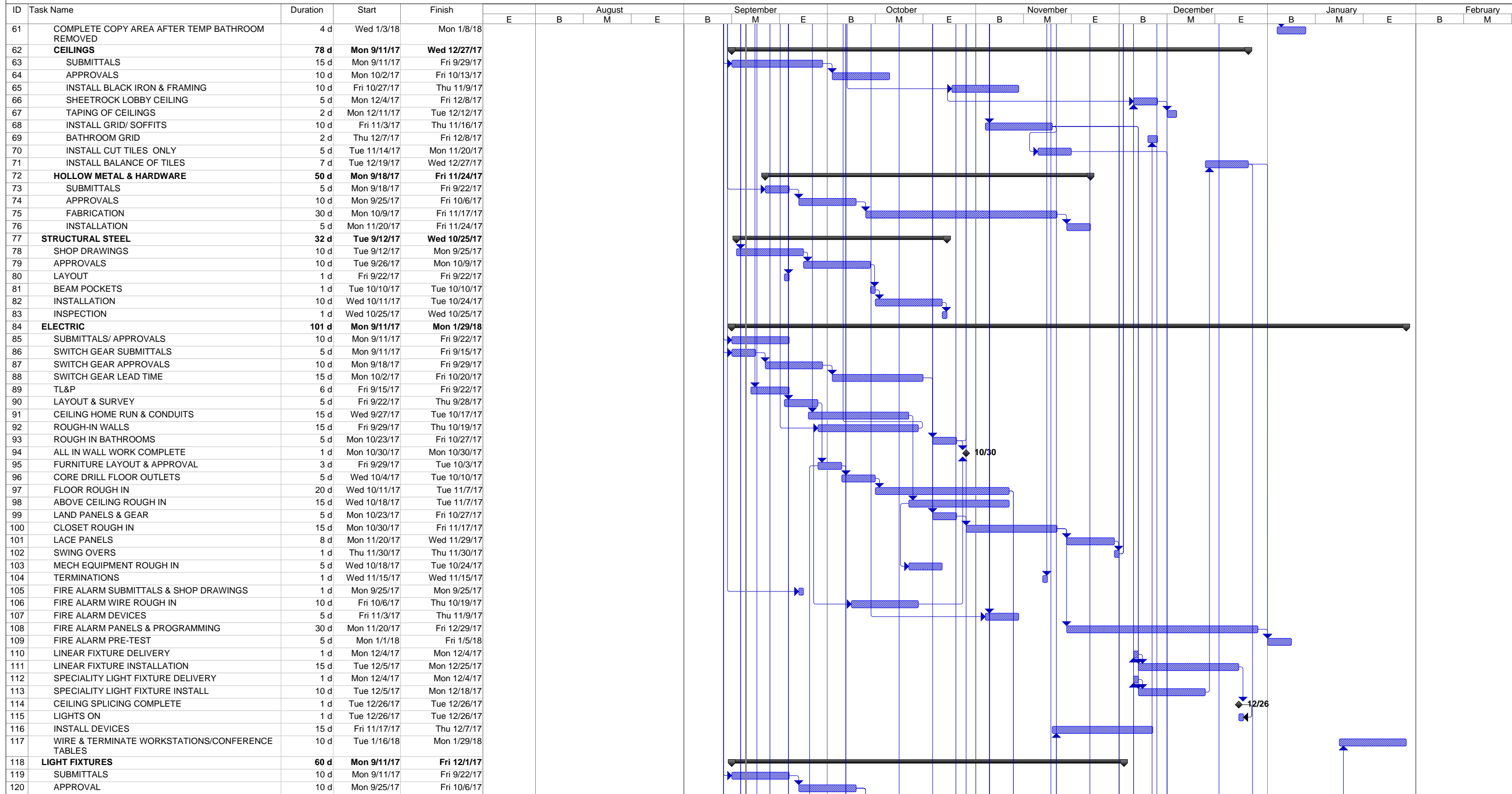
Rev.6 (9.14.2017)



Project: 20th Floor-90%CD's_9-11 Start_REV#6-14SEP17 Date: Thu 9/14/17	Task		Rolled Up Milestone		Project Summary		Inactive Summary		Manual Summary	
	Milestone		Rolled Up Progress		Group By Summary		Manual Task		Start-only	
	Summary		Split		Inactive Task		Duration-only		Finish-only	
	Rolled Up Task		External Tasks		Inactive Milestone		Manual Summary Rollup		Progress	

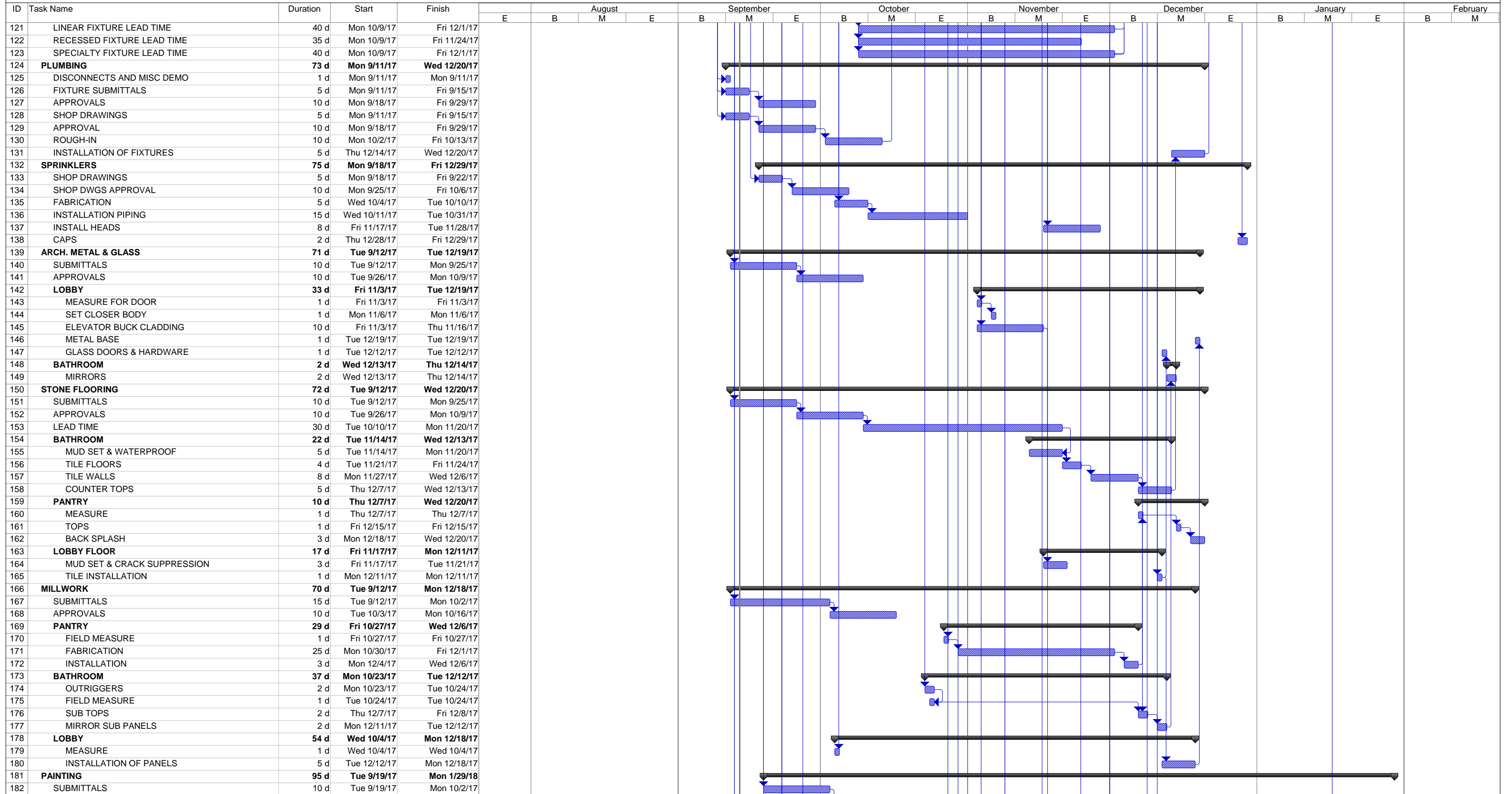
20TH FLOOR

Rev.6 (9.14.2017)



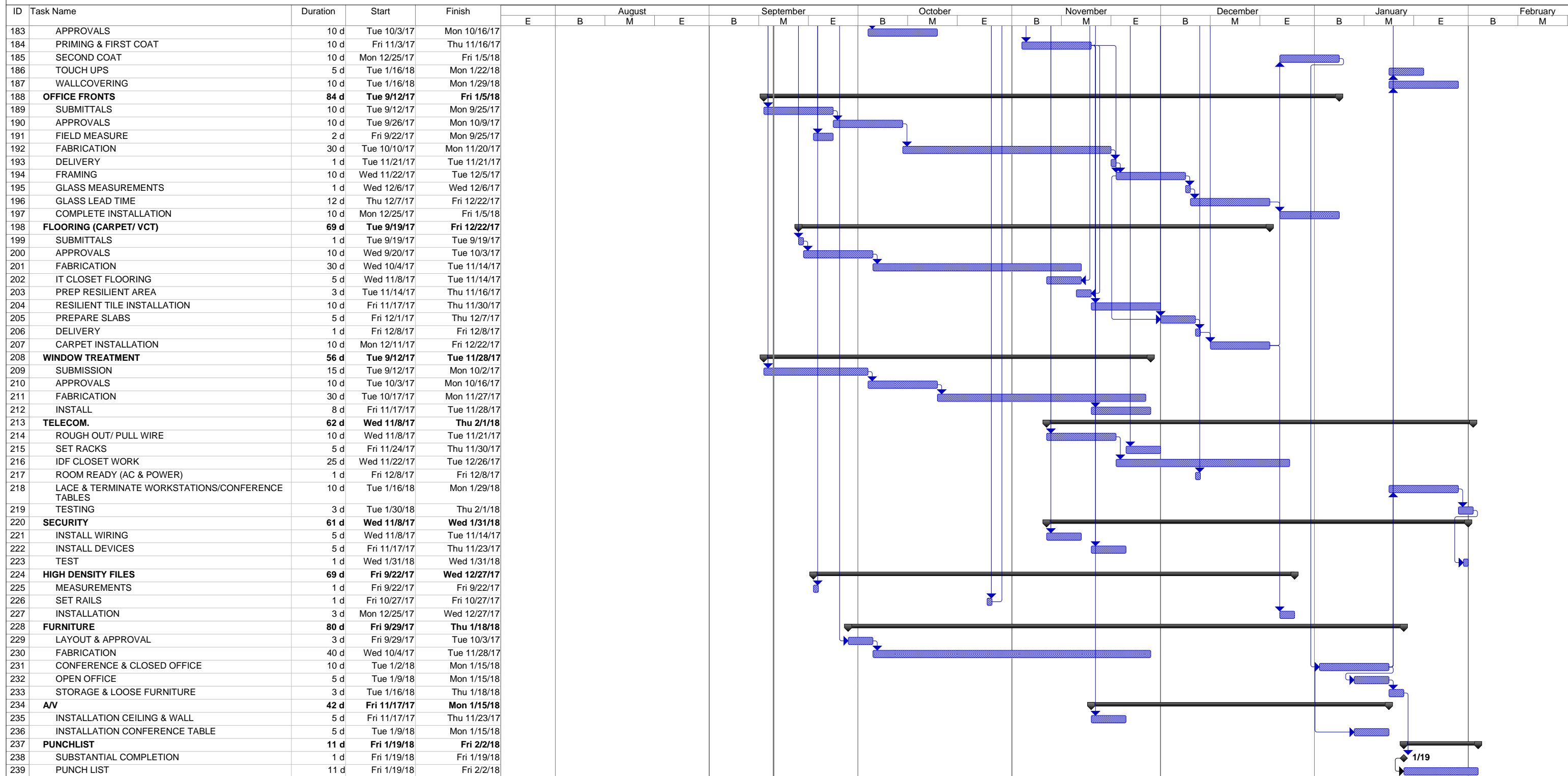
Project: 20th Floor-90%CD's_9-11 Start_REV#6-14SEP17 Date: Thu 9/14/17	Task		Rolled Up Milestone		Project Summary		Inactive Summary		Manual Summary	
	Milestone		Rolled Up Progress		Group By Summary		Manual Task		Start-only	
	Summary		Split		Inactive Task		Duration-only		Finish-only	
	Rolled Up Task		External Tasks		Inactive Milestone		Manual Summary Rollup		Progress	

20TH FLOOR
Rev.6 (9.14.2017)



Project: 20th Floor-90%CD's_9-11 Start_REV#6-14SEP17 Date: Thu 9/14/17	Task	Rolled Up Milestone	Project Summary	Inactive Summary	Manual Summary	Start-only	Finish-only	Progress
	Milestone	Rolled Up Progress	Group By Summary	Manual Task	Duration-only	Start-only	Finish-only	Progress
	Summary	Split	Inactive Task	Manual Summary Rollup	Duration-only	Start-only	Finish-only	Progress
	Rolled Up Task	External Tasks	Inactive Milestone	Manual Summary Rollup	Duration-only	Start-only	Finish-only	Progress

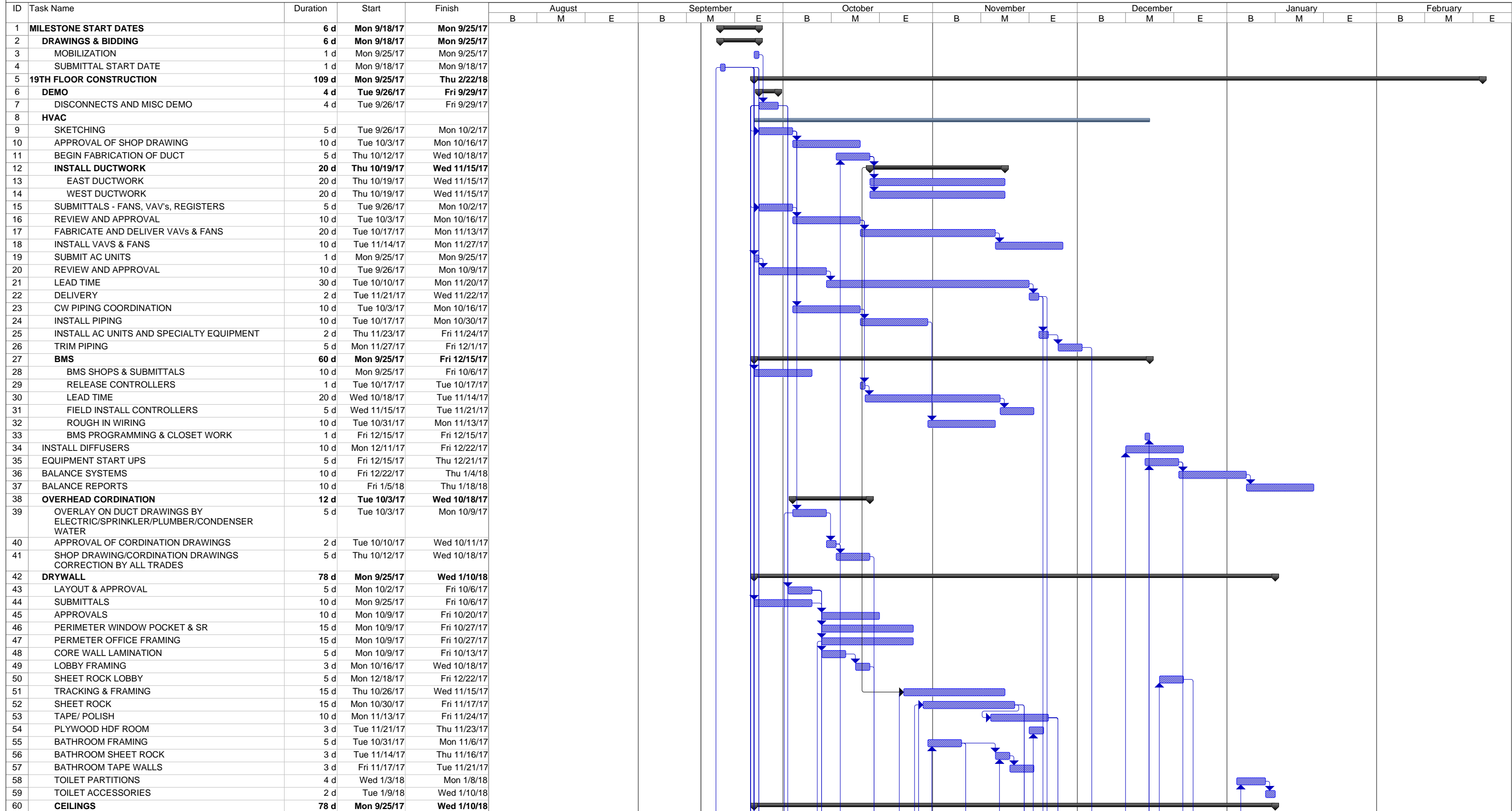
20TH FLOOR
Rev.6 (9.14.2017)



Project: 20th Floor-90%CD's_9-11 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Milestone		Project Summary		Inactive Summary		Manual Summary	
Milestone		Rolled Up Progress		Group By Summary		Manual Task		Start-only	
Summary		Split		Inactive Task		Duration-only		Finish-only	
Rolled Up Task		External Tasks		Inactive Milestone		Manual Summary Rollup		Progress	

19TH FLOOR
Rev.6 (9.14.17)



Project: 19th Floor-90% CD's_9-25 Start_REV#6-14SEP17
Date: Thu 9/14/17

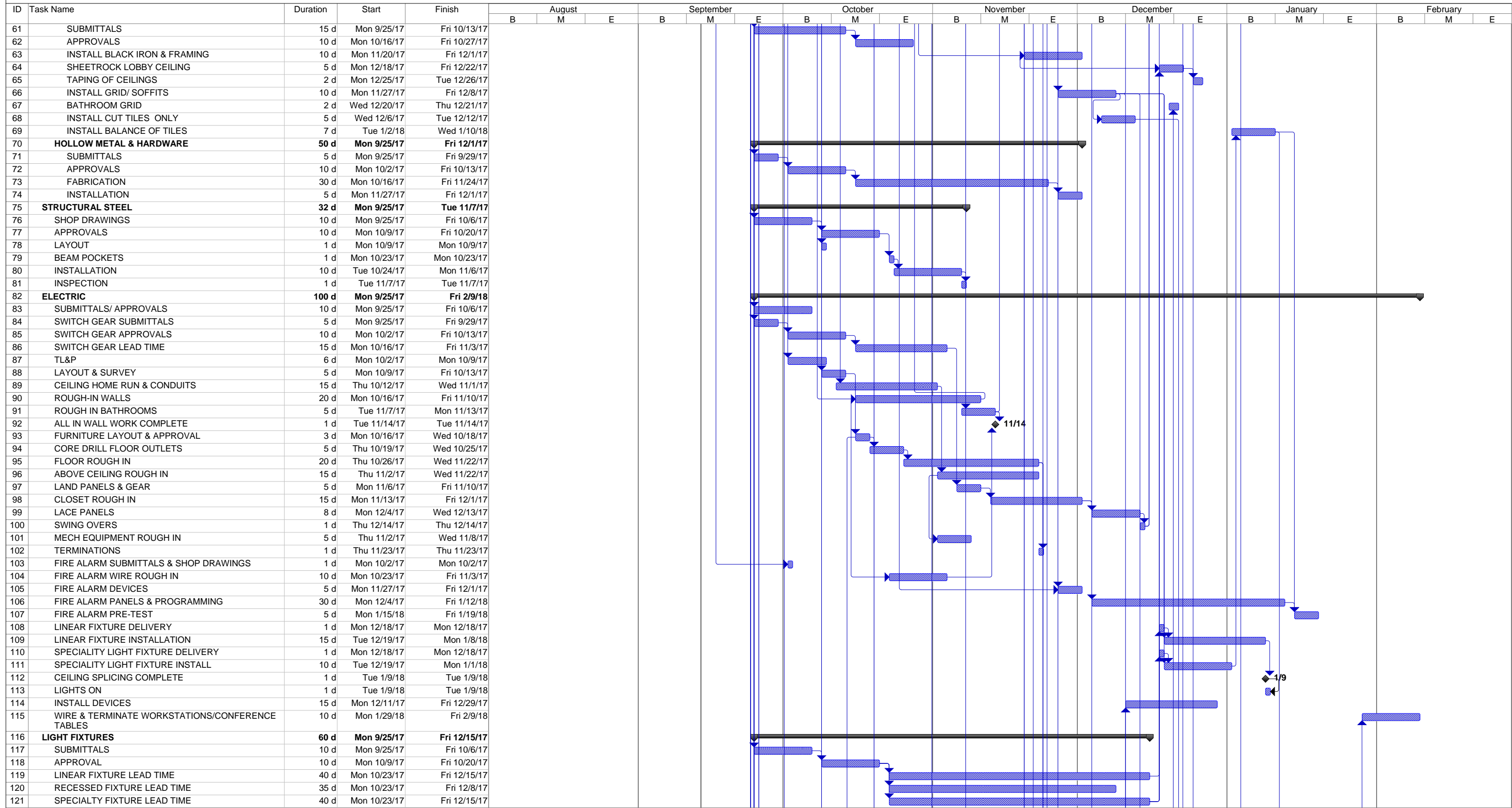
Task: Rolled Up Task External Tasks Manual Task Manual Summary

Milestone: Rolled Up Milestone Project Summary Duration-only Progress

Summary: Rolled Up Progress Group By Summary Manual Summary Rollup

19TH FLOOR

Rev.6 (9.14.17)

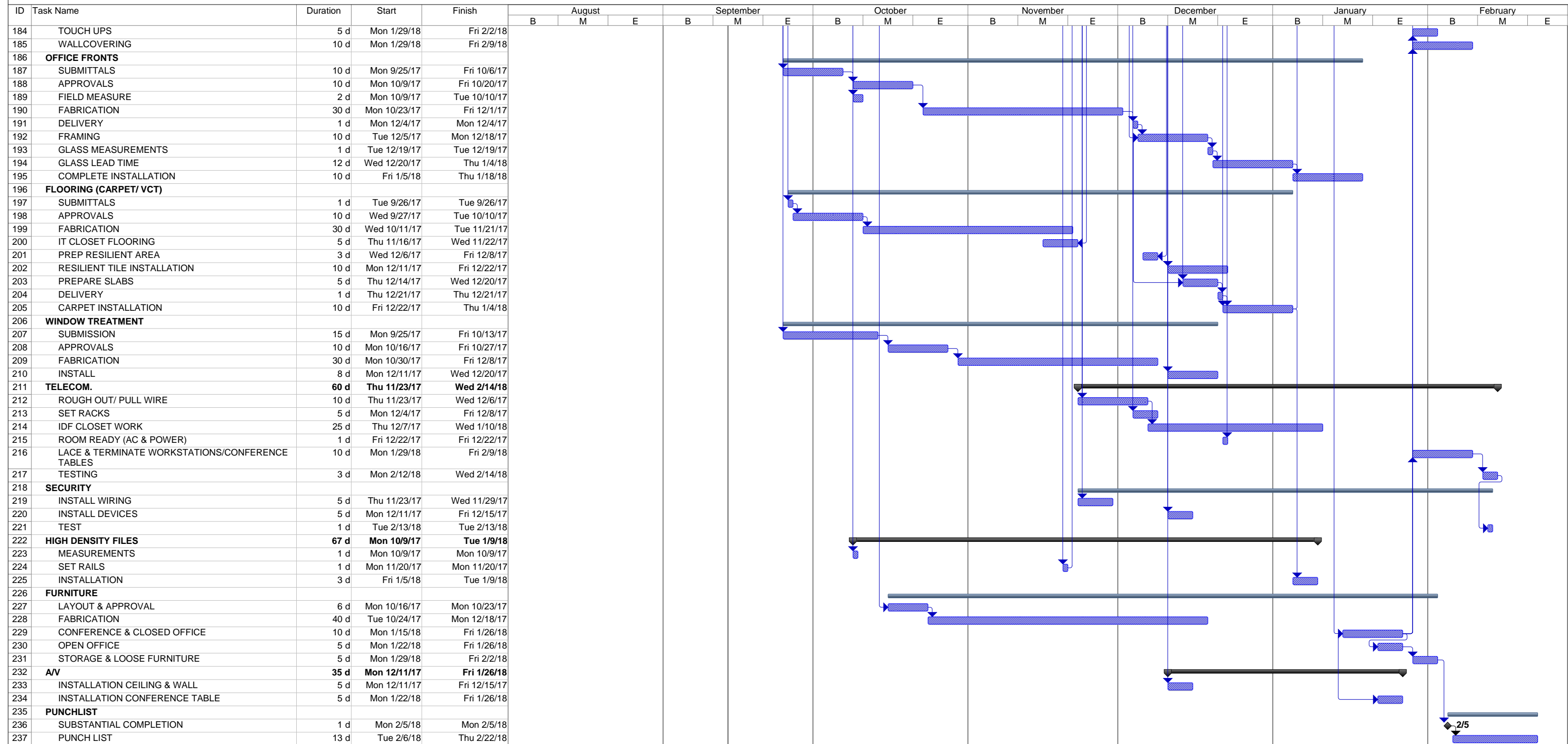


Project: 19th Floor-90% CD's_9-25 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Task		External Tasks		Manual Task		Manual Summary	
Milestone		Rolled Up Milestone		Project Summary		Duration-only		Progress	
Summary		Rolled Up Progress		Group By Summary		Manual Summary Rollup			

19TH FLOOR

Rev.6 (9.14.17)



Project: 19th Floor-90% CD's_9-25 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Task		External Tasks		Manual Task		Manual Summary	
Milestone		Rolled Up Milestone		Project Summary		Duration-only		Progress	
Summary		Rolled Up Progress		Group By Summary		Manual Summary Rollup			

18TH FLOOR

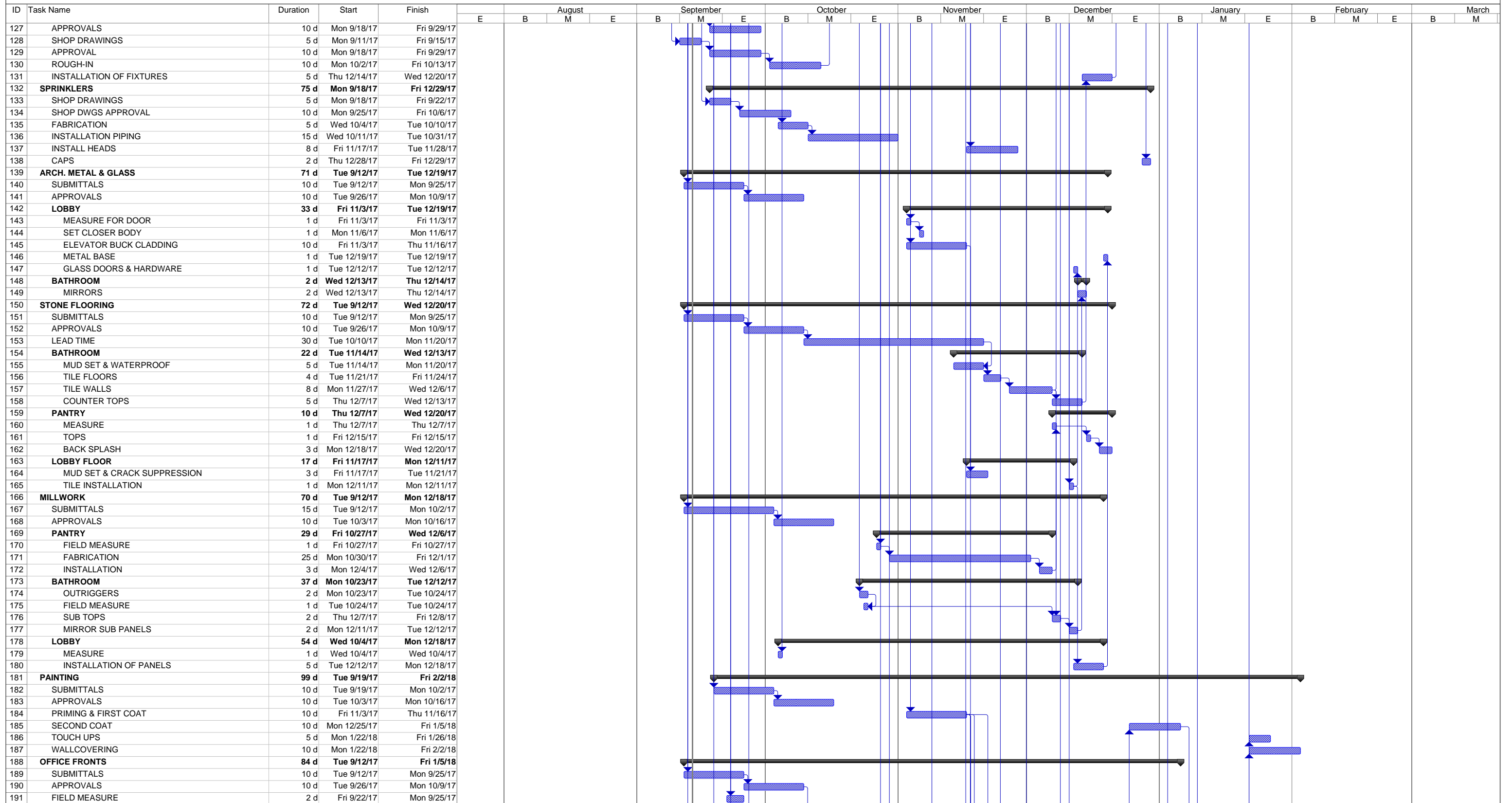
Rev.6 (9.14.17)

ID	Task Name	Duration	Start	Finish	August			September			October			November			December			January			February		
					B	M	E	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E
1	MILESTONE START DATES	6 d	Mon 9/18/17	Mon 9/25/17																					
2	DRAWINGS & BIDDING	6 d	Mon 9/18/17	Mon 9/25/17																					
3	MOBILIZATION	1 d	Mon 9/25/17	Mon 9/25/17																					
4	SUBMITTAL START DATE	1 d	Mon 9/18/17	Mon 9/18/17																					
5	18TH FLOOR CONSTRUCTION	109 d	Mon 9/25/17	Thu 2/22/18																					
6	DEMO	79 d	Mon 9/25/17	Thu 1/11/18																					
7	DISCONNECTS AND MISC DEMO	4 d	Mon 9/25/17	Thu 9/28/17																					
8	DEMO TEMP BATHROOM	1 d	Thu 1/11/18	Thu 1/11/18																					
9	HVAC																								
10	SKETCHING	5 d	Mon 9/25/17	Fri 9/29/17																					
11	APPROVAL OF SHOP DRAWING	10 d	Mon 10/2/17	Fri 10/13/17																					
12	BEGIN FABRICATION OF DUCT	5 d	Wed 10/11/17	Tue 10/17/17																					
13	INSTALL DUCTWORK	20 d	Wed 10/18/17	Tue 11/14/17																					
14	EAST DUCTWORK	20 d	Wed 10/18/17	Tue 11/14/17																					
15	WEST DUCTWORK	20 d	Wed 10/18/17	Tue 11/14/17																					
16	SUBMITTALS - FANS, VAV's, REGISTERS	5 d	Mon 9/25/17	Fri 9/29/17																					
17	REVIEW AND APPROVAL	10 d	Mon 10/2/17	Fri 10/13/17																					
18	FABRICATE AND DELIVER VAVs & FANS	20 d	Mon 10/16/17	Fri 11/10/17																					
19	INSTALL VAVs & FANS	10 d	Mon 11/13/17	Fri 11/24/17																					
20	SUBMIT AC UNITS	1 d	Mon 9/25/17	Mon 9/25/17																					
21	REVIEW AND APPROVAL	10 d	Tue 9/26/17	Mon 10/9/17																					
22	LEAD TIME	30 d	Tue 10/10/17	Mon 11/20/17																					
23	DELIVERY	2 d	Tue 11/21/17	Wed 11/22/17																					
24	CW PIPING COORDINATION	10 d	Mon 10/2/17	Fri 10/13/17																					
25	INSTALL PIPING	10 d	Mon 10/16/17	Fri 10/27/17																					
26	INSTALL AC UNITS AND SPECIALTY EQUIPMENT	2 d	Thu 11/23/17	Fri 11/24/17																					
27	TRIM PIPING	5 d	Mon 11/27/17	Fri 12/1/17																					
28	BMS	60 d	Mon 9/25/17	Fri 12/15/17																					
29	BMS SHOPS & SUBMITTALS	10 d	Mon 9/25/17	Fri 10/6/17																					
30	RELEASE CONTROLLERS	1 d	Mon 10/16/17	Mon 10/16/17																					
31	LEAD TIME	20 d	Tue 10/17/17	Mon 11/13/17																					
32	FIELD INSTALL CONTROLLERS	5 d	Tue 11/14/17	Mon 11/20/17																					
33	ROUGH IN WIRING	10 d	Mon 10/30/17	Fri 11/10/17																					
34	BMS PROGRAMMING & CLOSET WORK	1 d	Fri 12/15/17	Fri 12/15/17																					
35	INSTALL DIFFUSERS	10 d	Fri 12/8/17	Thu 12/21/17																					
36	EQUIPMENT START UPS	5 d	Fri 12/15/17	Thu 12/21/17																					
37	BALANCE SYSTEMS	10 d	Fri 12/22/17	Thu 1/4/18																					
38	BALANCE REPORTS	10 d	Fri 1/5/18	Thu 1/18/18																					
39	OVERHEAD CORDINATION	12 d	Mon 10/2/17	Tue 10/17/17																					
40	OVERLAY ON DUCT DRAWINGS BY ELECTRIC/SPRINKLER/PLUMBER/CONDENSER WATER	5 d	Mon 10/2/17	Fri 10/6/17																					
41	APPROVAL OF CORDINATION DRAWINGS	2 d	Mon 10/9/17	Tue 10/10/17																					
42	SHOP DRAWING/CORDINATION DRAWINGS CORRECTION BY ALL TRADES	5 d	Wed 10/11/17	Tue 10/17/17																					
43	DRYWALL	80 d	Mon 9/25/17	Fri 1/12/18																					
44	LAYOUT & APPROVAL	5 d	Fri 9/29/17	Thu 10/5/17																					
45	SUBMITTALS	10 d	Mon 9/25/17	Fri 10/6/17																					
46	APPROVALS	10 d	Mon 10/9/17	Fri 10/20/17																					
47	PERIMETER WINDOW POCKET & SR	15 d	Fri 10/6/17	Thu 10/26/17																					
48	PERMETER OFFICE FRAMING	15 d	Fri 10/6/17	Thu 10/26/17																					
49	CORE WALL LAMINATION	5 d	Fri 10/6/17	Thu 10/12/17																					
50	LOBBY FRAMING	3 d	Fri 10/13/17	Tue 10/17/17																					
51	SHEET ROCK LOBBY	5 d	Mon 12/18/17	Fri 12/22/17																					
52	TRACKING & FRAMING	15 d	Wed 10/25/17	Tue 11/14/17																					
53	SHEET ROCK	15 d	Fri 10/27/17	Thu 11/16/17																					
54	TAPE/ POLISH	10 d	Fri 11/10/17	Thu 11/23/17																					
55	PLYWOOD HDF ROOM	3 d	Mon 11/20/17	Wed 11/22/17																					
56	BATHROOM FRAMING	5 d	Mon 10/30/17	Fri 11/3/17																					
57	BATHROOM SHEET ROCK	3 d	Mon 11/13/17	Wed 11/15/17																					
58	BATHROOM TAPE WALLS	3 d	Thu 11/16/17	Mon 11/20/17																					
59	TOILET PARTITIONS	4 d	Wed 1/3/18	Mon 1/8/18																					
60	TOILET ACCESSORIES	2 d	Tue 1/9/18	Wed 1/10/18																					

Project: 18th Floor-90%CD's_9-25 Start_REV#6-14SEP17 Date: Thu 9/14/17	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Task</td> <td style="width: 10%;">[Blue Box]</td> <td style="width: 20%;">Rolled Up Milestone</td> <td style="width: 10%;">◇</td> <td style="width: 10%;">Project Summary</td> <td style="width: 10%;">[Grey Arrow]</td> <td style="width: 10%;">Inactive Summary</td> <td style="width: 10%;">[White Arrow]</td> <td style="width: 10%;">Manual Summary</td> <td style="width: 10%;">[Black Arrow]</td> </tr> <tr> <td>Milestone</td> <td>◆</td> <td>Rolled Up Progress</td> <td>—</td> <td>Group By Summary</td> <td>[Thick Arrow]</td> <td>Manual Task</td> <td>[Green Box]</td> <td>Start-only</td> <td>[C-Shape]</td> </tr> <tr> <td>Summary</td> <td>[Thick Arrow]</td> <td>Split</td> <td>[Dotted Line]</td> <td>Inactive Task</td> <td>[White Box]</td> <td>Duration-only</td> <td>[Light Blue Box]</td> <td>Finish-only</td> <td>[J-Shape]</td> </tr> <tr> <td>Rolled Up Task</td> <td>[Blue Box]</td> <td>External Tasks</td> <td>[Grey Box]</td> <td>Inactive Milestone</td> <td>◇</td> <td>Manual Summary Rollup</td> <td>[Blue Arrow]</td> <td>Progress</td> <td>[Black Arrow]</td> </tr> </table>	Task	[Blue Box]	Rolled Up Milestone	◇	Project Summary	[Grey Arrow]	Inactive Summary	[White Arrow]	Manual Summary	[Black Arrow]	Milestone	◆	Rolled Up Progress	—	Group By Summary	[Thick Arrow]	Manual Task	[Green Box]	Start-only	[C-Shape]	Summary	[Thick Arrow]	Split	[Dotted Line]	Inactive Task	[White Box]	Duration-only	[Light Blue Box]	Finish-only	[J-Shape]	Rolled Up Task	[Blue Box]	External Tasks	[Grey Box]	Inactive Milestone	◇	Manual Summary Rollup	[Blue Arrow]	Progress	[Black Arrow]
Task	[Blue Box]	Rolled Up Milestone	◇	Project Summary	[Grey Arrow]	Inactive Summary	[White Arrow]	Manual Summary	[Black Arrow]																																
Milestone	◆	Rolled Up Progress	—	Group By Summary	[Thick Arrow]	Manual Task	[Green Box]	Start-only	[C-Shape]																																
Summary	[Thick Arrow]	Split	[Dotted Line]	Inactive Task	[White Box]	Duration-only	[Light Blue Box]	Finish-only	[J-Shape]																																
Rolled Up Task	[Blue Box]	External Tasks	[Grey Box]	Inactive Milestone	◇	Manual Summary Rollup	[Blue Arrow]	Progress	[Black Arrow]																																

16TH FLOOR

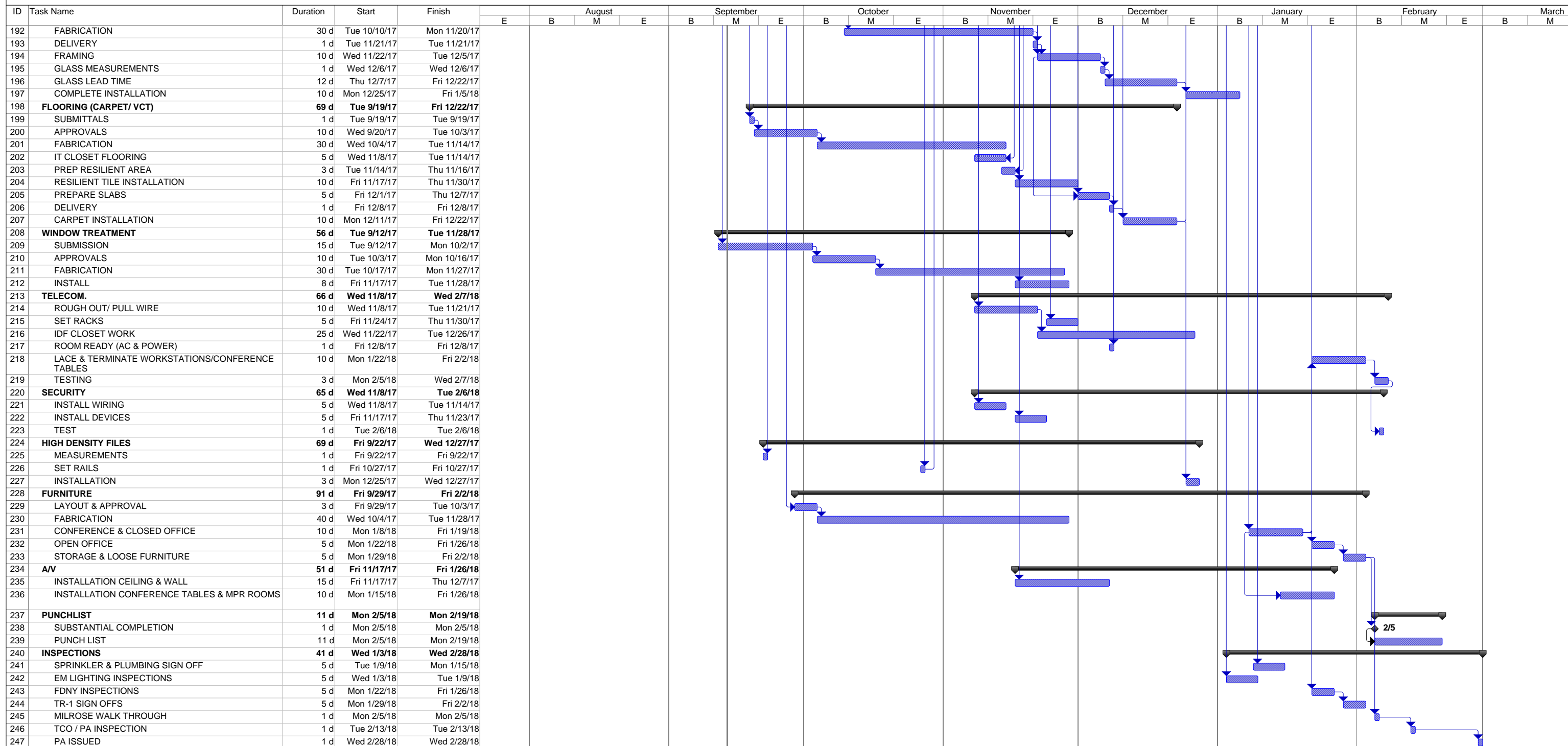
Rev.6 (9.14.17)



Project: 16th Floor-90%CD's_9-11 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Milestone		Project Summary		Inactive Summary		Manual Summary	
Milestone		Rolled Up Progress		Group By Summary		Manual Task		Start-only	
Summary		Split		Inactive Task		Duration-only		Finish-only	
Rolled Up Task		External Tasks		Inactive Milestone		Manual Summary Rollup		Progress	

16TH FLOOR
Rev.6 (9.14.17)

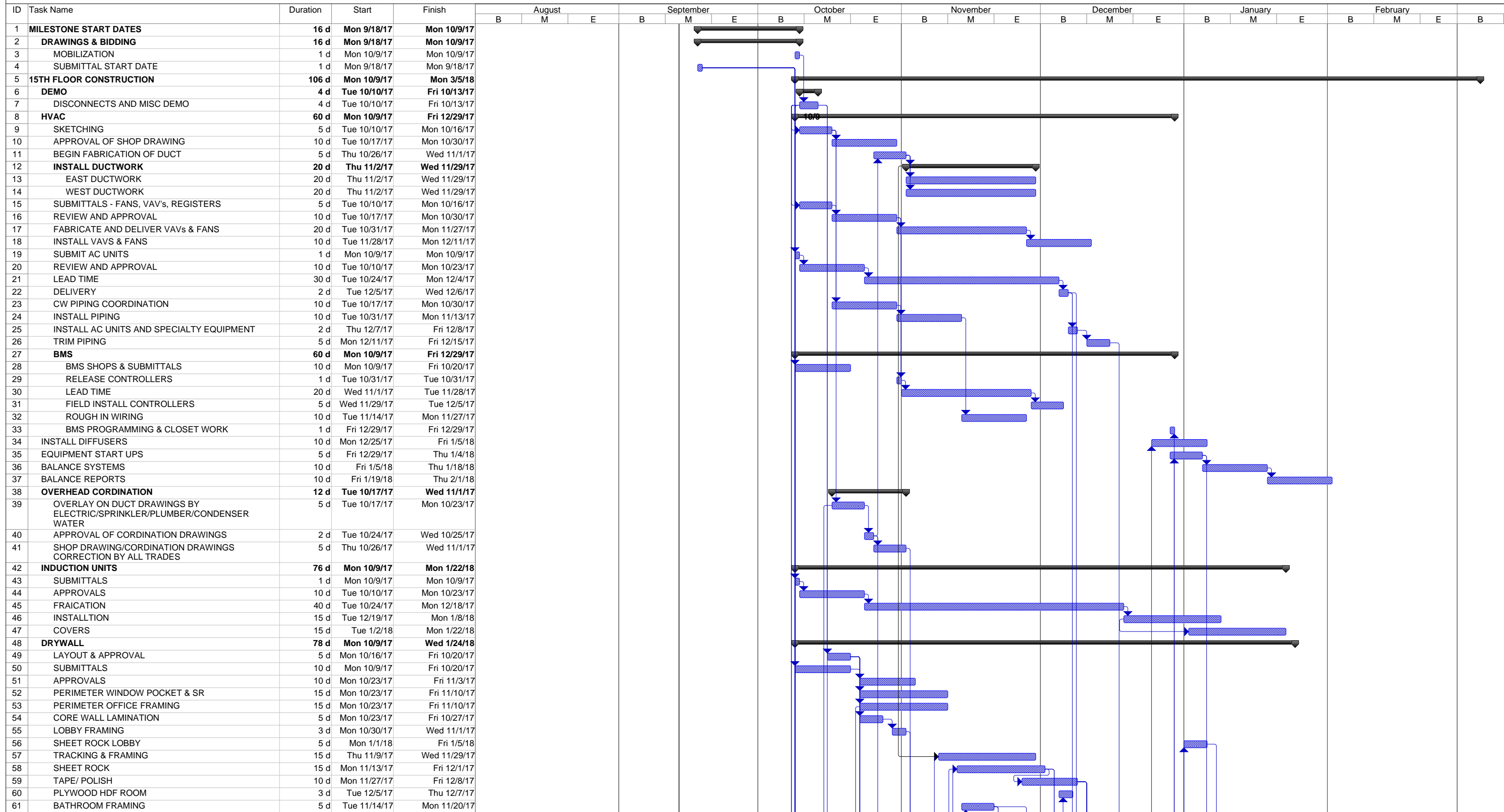


Project: 16th Floor-90%CD's_9-11 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Milestone		Project Summary		Inactive Summary		Manual Summary	
Milestone		Rolled Up Progress		Group By Summary		Manual Task		Start-only	
Summary		Split		Inactive Task		Duration-only		Finish-only	
Rolled Up Task		External Tasks		Inactive Milestone		Manual Summary Rollup		Progress	

15TH FLOOR

Rev.6 (9.14.17)

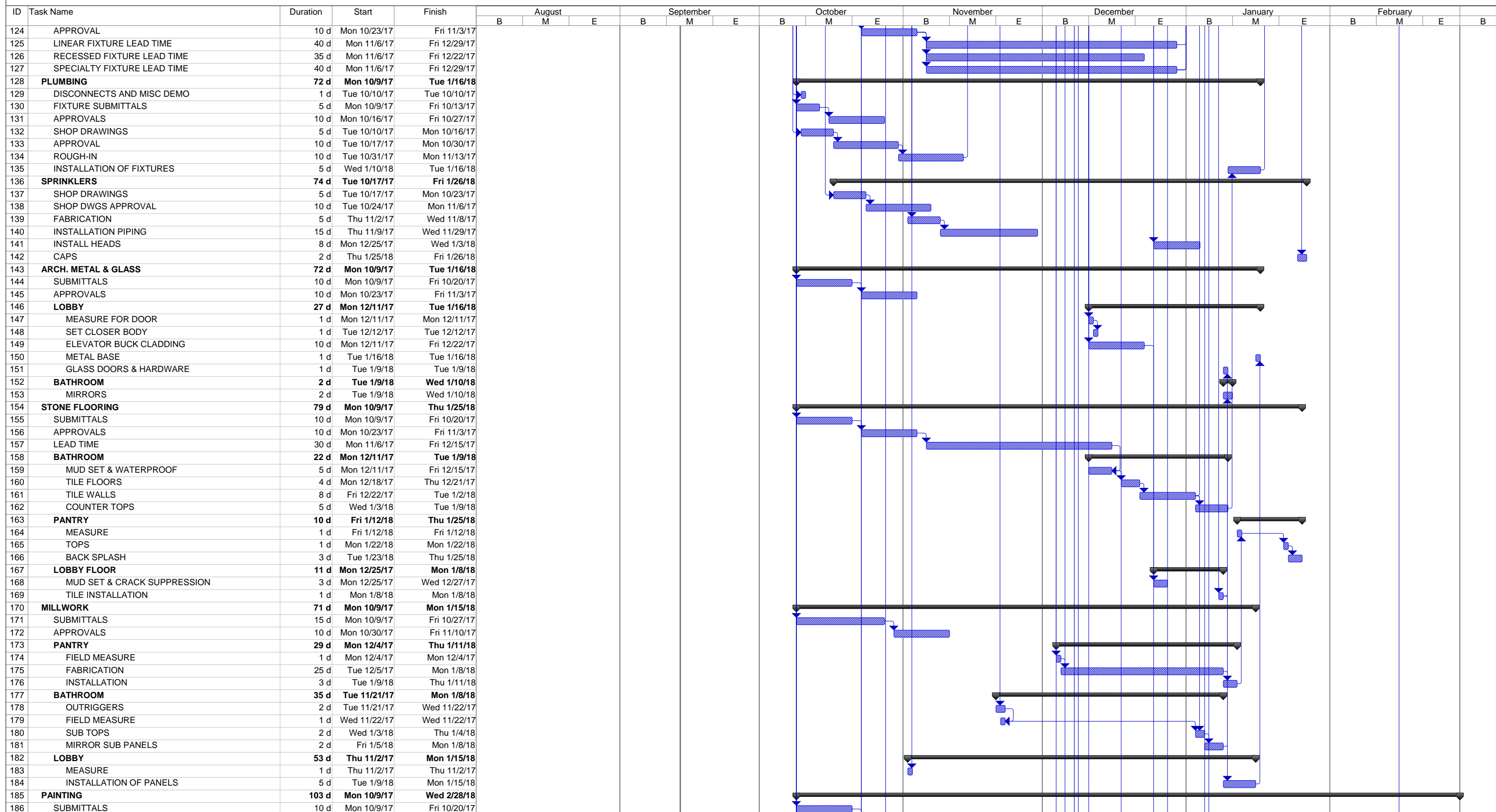


Project: 15th Floor-90%CD's_10-9 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task		Rolled Up Task		Split		Group By Summary		Start-only	
Milestone		Rolled Up Milestone		External Tasks		Manual Summary Rollup		Finish-only	
Summary		Rolled Up Progress		Project Summary		Manual Summary		Progress	

15TH FLOOR

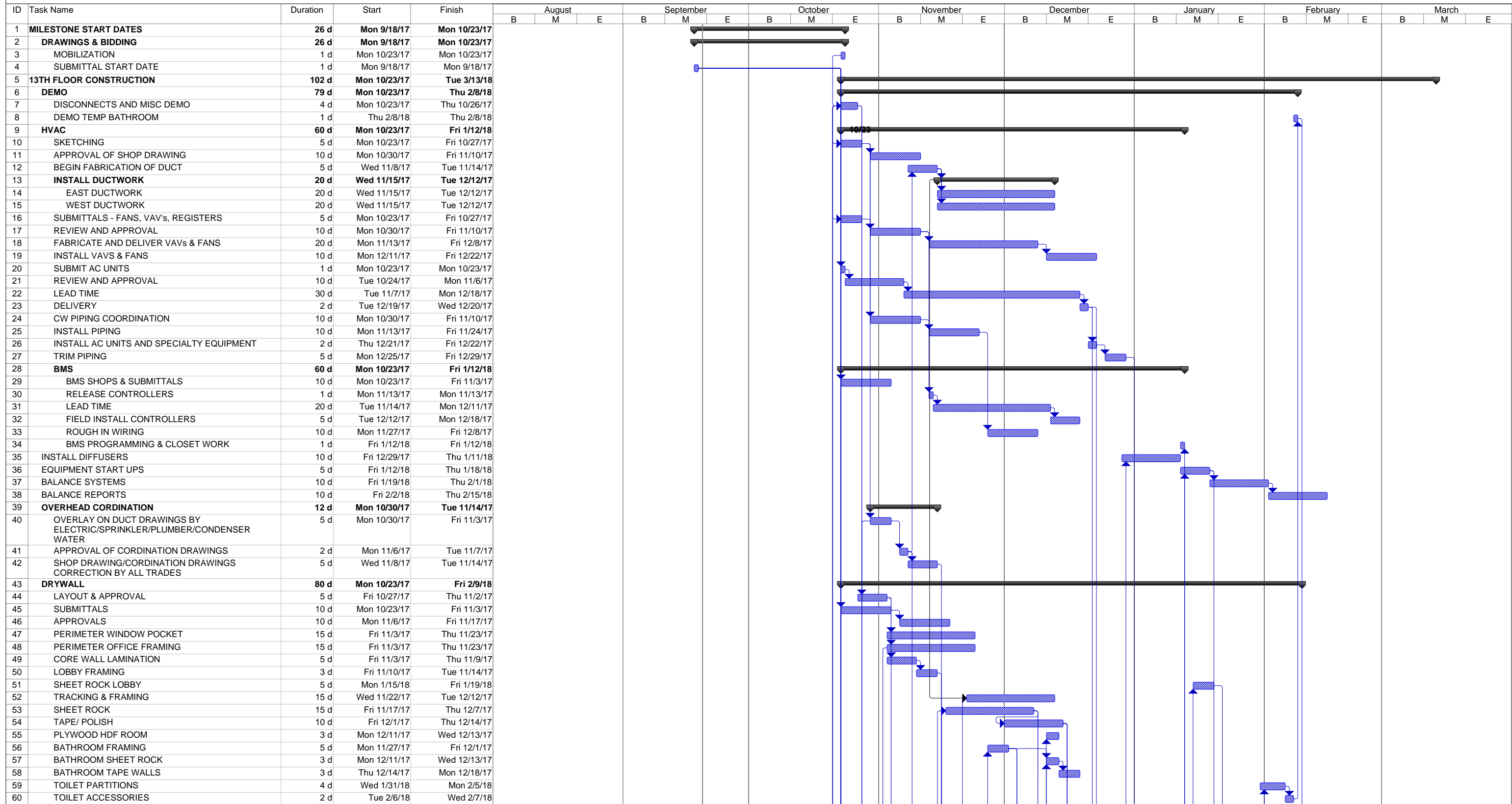
Rev.6 (9.14.17)



Project: 15th Floor-90%CD's_10-9 Start_REV#6-14SEP17
Date: Thu 9/14/17

Task	Rolled Up Task	Split	Group By Summary	Start-only	Milestone
Milestone	Rolled Up Milestone	External Tasks	Manual Summary Rollup	Finish-only	Milestone
Summary	Rolled Up Progress	Project Summary	Manual Summary	Progress	Summary

13TH FLOOR
Rev.6 (9.14.17)



Project: 13th Floor-90%CD's_10-23 Start_REV#6-14SEP17
Date: Wed 9/20/17

Task	Rolled Up Milestone	Project Summary	Inactive Summary	Manual Summary
Milestone	Rolled Up Progress	Group By Summary	Manual Task	Start-only
Summary	Split	Inactive Task	Duration-only	Finish-only
Rollled Up Task	External Tasks	Inactive Milestone	Manual Summary Rollup	Progress

I. INTRODUCTION

The Guidelines have been issued pursuant to the New York State Finance Law, which prohibits lobbying on procurement contracts. The Guidelines, which apply to all Office of Attorney General (OAG) procurement contracts, limit communications between offerers and the OAG during the Restricted Period of a Governmental Procurement. During the Restricted Period, an Offerer may only communicate with the person or persons designated by the OAG to receive communications regarding such Governmental Procurement.

II. STATUTORY DEFINITIONS¹

Article of Procurement: A commodity, service, technology, public work, construction, revenue contract, the purchase sale or lease of real property or an acquisition or granting of an interest in real property that is the subject of a governmental procurement.

Contact: Any oral, written or electronic communication with the OAG under circumstances where a reasonable person would infer that the communication was intended to influence the governmental procurement.

Governmental Entity: All New York State agencies and authorities, both houses of the Legislature, the Unified Court System, municipal agencies and their respective employees.

Governmental Procurement: shall mean: (i) the preparation of terms of the specifications, bid documents, requests for proposals, or evaluations criteria for a procurement contract, (ii) solicitation for a procurement contract, (iii) evaluation of a procurement contract, (iv) award, approval, denial or disapproval of a procurement contract, or (v) approval or denial of an assignment, amendment (other than amendments that are authorized and payable under the terms of the procurement contract as it was finally awarded or approved by the Comptroller, as applicable), renewal or extension of procurement contract, or any other material change in the procurement contract resulting in a financial benefit to the offerer.

Offerer: The individual or entity, or any employee agent or consultant or person acting on behalf of such individual or entity, that communicates with the OAG about a **Governmental Procurement** or seeks to participate in a **Governmental Procurement**.

Procurement Contract: Any contract or other agreement for an **Article of Procurement** involving an estimated annualized expenditure in excess of \$15,000. Grants, Article 11-B State Finance Law Contracts, Intergovernmental Agreements, Railroad and Utility Force Accounts, Utility Relocation Project Agreements or Orders of Eminent Domain Transactions shall not be deemed **Procurement Contracts** in these Guidelines.

Restricted Period: The period of time commencing with the earliest date of written notice, advertisement or solicitation of a request for proposal, invitation for bids, or solicitation of proposals, or any other method for soliciting a response from Offerers intending to result in a **Procurement Contract** with the OAG and, ending with the final contract award and approval by, where applicable, the Office of the State Comptroller.

III. EXEMPTIONS

Certain communications are exempt from the Guidelines. These include: (i) submissions in response to an invitation for bid, a

request for proposal or other solicitation, (ii) submissions of written questions to a designated contact set forth in an invitation for bid, request for proposal or other solicitation, (iii) participation in a conference provided for in an invitation for bid, request for proposal or other solicitation, (iv) contract negotiations, (v) inquiries regarding the factual status of a **Procurement Contract**, and (vi) complaints and protests regarding the procurement process and outcome.

In addition, any communication received by the OAG from members of the New York State Legislature or the Legislative Staff, when acting in their official capacity, shall not be considered a **Contact**.

IV. VIOLATIONS

A violation of these Guidelines occurs when there is a **Contact** during the **Restricted Period** between the **Offerer** and someone other than the person or persons designated by the OAG to receive communications for the particular **Governmental Procurement**. This includes instances where the **Offerer** **Contacts** the OAG regarding **Governmental Procurements** of other **Governmental Entities**.

Attempts by an **Offeror** to influence a **Governmental Procurement** in a manner that would result in a violation of the Public Officer's Law, the Executive Orders of the Attorney General, or any other applicable ethics code shall also be a violation of these Guidelines.

V. PROCEDURES

- A. Notifying Vendors of Procurement Lobbying Guidelines
 1. For each **Procurement Contract**, the OAG Budget and Fiscal Management Bureau will designate a person or persons to receive communications from **Offerers** concerning the **Procurement Contract**.
 2. The OAG Purchasing Team will incorporate a summary of the policy and prohibitions regarding permissible communications during a **Governmental Procurement** in its documents relating to the **Procurement Contract** and provide a copy of these Guidelines.
 3. The OAG Purchasing Team shall seek written affirmation from all **Offerers** as to the **Offerer's** understanding of and compliance with these Guidelines (Appears at the end of this guideline).
- B. Making Determinations of Responsibility
 1. Prior to award of a **Procurement Contract**, the OAG must make a responsibility determination with respect to the **Offerer** to be recommended for the award of the contract based upon, among other things, the information supplied by that **Offerer**. The **Offerer** must disclose in the Vendor Responsibility Questionnaire whether it has been found non-responsible within the last five years by any **Governmental Entity** for: (1) failure to comply with State Finance Law §139-j, or (2) the intentional provision of false or incomplete information. This disclosure must be certified by the **Offerer** and must affirmatively state that the information supplied by the **Offerer** to the OAG is complete, true and accurate (Appears at the end of this guideline).
 2. The **Procurement Contract** shall include a provision allowing the OAG to terminate the contract if the certification is subsequently found to be incomplete, false or inaccurate. Admissions by the **Offerer** of past findings of non-responsibility may constitute a basis for rejection of

the Offerer by the OAG. The OAG can award a contract to the **Offerer** despite the past findings of non-responsibility if it determines that the award of the **Procurement Contract** to the **Offerer** is necessary to protect public property or public health or safety, and that the **Offerer** is the only source capable of supplying the required **Article of Procurement** within the necessary time frame. The basis of such a finding must be included in the procurement record of the **Procurement Contract**.

C. Recording Contacts

1. All OAG employees must record any **Contact** from any person or entity. **Contacts** may be initiated by parties with an interest in the procurement that are not necessarily connected directly to the **Offerer**. **Contacts** may come in the form of telephone conversations, correspondence, electronic mail and person-to-person discussions. The Record of Contact Form should be used to record all **Contacts**.

2. Examples of **Contacts** for which a Record of Contact must be completed include:

- a. During the **Restricted Period**, an **Offerer Contacts** an OAG employee (other than the employee designated to receive such communications) to discuss the **Offerer's**, cost-competitiveness or its suitability to be selected for a contract
- b. A court reporter, expert witness or any other vendor offers an OAG employee a gift of any monetary value during the **Restricted Period**.

3. Examples of permissible communications for which there is no need to prepare Record of Contact include:

- a. Inquiries as to the status of the procurement process
- b. Requests to be included on the OAG's **Offerer's** list
- c. Receipt of advertising material
- d. Intra-agency communications of administrative details concerning the procurement
- e. Responses to OAG issued Requests for Information
- f. Written questions submitted by **Offerers** regarding a solicitation during the allowable time period of a competitive procurement
- g. Complaints about the procurement process or outcome
- h. Participation in an **Offerer's** conference as provided in a request for proposal or invitation for bid
- i. Submission of a bid in response to a request for proposal or invitation for bid
- j. Contract negotiations
- k. Debriefing of a **Offerer** after a contract award has been made

4. If an OAG employee is in doubt about whether a communication was intended to influence the **Governmental Procurement**, he/she should record the communication on the Record of Contact Form and submit it to ProcurementLaw@OAG.State.NY.US for further investigation

5. The OAG Purchasing Team will be required to include all Records of Contact in the procurement record for the related **Procurement Contract**.

D. Investigation of Contacts/ Penalties for Violations

1. All reported **Contacts** will be immediately investigated by the OAG Ethics Officer or his or her designee. If the OAG Ethics Officer finds sufficient cause to believe that an **Offerer** has violated these Guidelines, the **Offerer** will be notified in writing of the investigation and will be afforded an opportunity to respond to the alleged violation. Investigations will be completed as soon as practicable so as

not to delay the progress of the **Governmental Procurement**.

2. If the OAG Ethics Officer should find at the conclusion of the investigation that the **Offerer** knowingly and willfully made prohibited **Contact** in violation of these Guidelines, then the **Offerer** shall be disqualified as non-responsible, unless the OAG makes a finding that the award of the **Procurement Contract** to the **Offerer** is necessary to protect public property or public health or safety, and that the **Offerer** is the only source capable of supplying the required **Article of Procurement** within the necessary time frame. The basis of such a finding must be included in the procurement record of the **Procurement Contract**.

¹Defined terms are in bold

Company Understanding & Compliance with State Finance Law Section 139-j & 139-k:

Company affirms that it understands and agrees to comply with the procedures of the Office of the Attorney General relative to permissible contacts as required by State Finance Law Section 139-j (3) and Section 139-j (6) (b); and that all information provided to the Office of the Attorney General, with respect to State Finance Law Section 139-k is complete, true and accurate.

Signed By: _____

Date: _____

Name (Print): _____

Title: _____

Company Name: _____

Company Address: _____

Company Disclosure of Prior Non-Responsibility Determinations:

Has any NYS agency/authority made a finding of non-responsibility regarding the Offerer in the last 5 years?:
 Yes No

Has any NYS agency/authority terminated a procurement contract with the Offerer due to intentional provision of false or incomplete information?:
 Yes No

If "Yes" to either/both questions, please provide details; such as: NYS Agency/Authority, Basis for Finding, Year of Finding/Termination, and Facts Underlying Finding/Termination.

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

You have selected the For-Profit Non-Construction questionnaire which may be printed and completed in this format or, for your convenience, may be completed online using the New York State VendRep System.

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor's business and operations. An owner or officer must certify the questionnaire and the signature must be notarized.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the "New York State Vendor Responsibility Definitions List," found at www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf. These terms may not have their ordinary, common or traditional meanings. Each vendor is strongly encouraged to read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered. Each response must provide all relevant information which can be obtained within the limits of the law. However, information regarding a determination or finding made in error which was subsequently corrected is not required. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

REPORTING ENTITY

Each vendor must indicate if the questionnaire is filed on behalf of the entire Legal Business Entity or an Organizational Unit within or operating under the authority of the Legal Business Entity and having the same EIN. Generally, the Organizational Unit option may be appropriate for a vendor that meets the definition of "Reporting Entity" but due to the size and complexity of the Legal Business Entity, is best able to provide the required information for the Organizational Unit, while providing more limited information for other parts of the Legal Business Entity and Associated Entities.

ASSOCIATED ENTITY

An Associated Entity is one that owns or controls the Reporting Entity or any entity owned or controlled by the Reporting Entity. However, the term Associated Entity does **not** include "sibling organizations" (i.e., entities owned or controlled by a parent company that owns or controls the Reporting Entity), unless such sibling entity has a direct relationship with or impact on the Reporting Entity.

STRUCTURE OF THE QUESTIONNAIRE

The questionnaire is organized into eleven sections. Section I is to be completed for the Legal Business Entity. Section II requires the vendor to specify the Reporting Entity for the questionnaire. Section III refers to the individuals of the Reporting Entity, while Sections IV-VIII require information about the Reporting Entity. Section IX pertains to any Associated Entities, with one question about their Officials/Owners. Section X relates to disclosure under the Freedom of Information Law (FOIL). Section XI requires an authorized contact for the questionnaire information.

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

I. LEGAL BUSINESS ENTITY INFORMATION			
<u>Legal Business Entity Name</u> *		<u>EIN</u>	
Address of the <u>Principal Place of Business</u> (street, city, state, zip code)		<u>New York State Vendor Identification Number</u>	
		Telephone ext.	Fax
Email		Website	
Additional <u>Legal Business Entity</u> Identities: If applicable, list any other <u>DBA</u> , <u>Trade Name</u> , <u>Former Name</u> , Other Identity, or <u>EIN</u> used in the last five (5) years and the status (active or inactive).			
Type	Name	EIN	Status
1.0 <u>Legal Business Entity</u> Type – Check appropriate box and provide additional information:			
<input type="checkbox"/> <u>Corporation</u> (including <u>PC</u>)		Date of Incorporation	
<input type="checkbox"/> <u>Limited Liability Company (LLC or PLLC)</u>		Date of Organization	
<input type="checkbox"/> <u>Partnership</u> (including <u>LLP</u> , <u>LP</u> or <u>General</u>)		Date of Registration or Establishment	
<input type="checkbox"/> <u>Sole Proprietor</u>		How many years in business?	
<input type="checkbox"/> Other		Date Established	
If Other, explain:			
1.1 Was the <u>Legal Business Entity</u> formed or incorporated in New York State?			<input type="checkbox"/> Yes <input type="checkbox"/> No
If ‘No,’ indicate jurisdiction where <u>Legal Business Entity</u> was formed or incorporated and attach a <u>Certificate of Good Standing</u> from the applicable jurisdiction or provide an explanation if a <u>Certificate of Good Standing</u> is not available.			
<input type="checkbox"/> United States State _____			
<input type="checkbox"/> Other Country _____			
Explain, if not available:			
1.2 Is the <u>Legal Business Entity</u> publicly traded?			<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide <u>CIK Code</u> or Ticker Symbol			
1.3 Does the <u>Legal Business Entity</u> have a <u>DUNS</u> Number?			<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” Enter <u>DUNS</u> Number			

*All underlined terms are defined in the “New York State Vendor Responsibility Definitions List,” which can be found at www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

I. LEGAL BUSINESS ENTITY INFORMATION

1.4 If the Legal Business Entity's Principal Place of Business is not in New York State, does the Legal Business Entity maintain an office in New York State?
(Select "N/A," if Principal Place of Business is in New York State.)

Yes No
 N/A

If "Yes," provide the address and telephone number for one office located in New York State.

1.5 Is the Legal Business Entity a New York State certified Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), New York State Small Business (SB) or a federally certified Disadvantaged Business Enterprise (DBE)?

If "Yes," check all that apply:

New York State certified Minority-Owned Business Enterprise (MBE)
 New York State certified Women-Owned Business Enterprise (WBE)
 New York State Small Business (SB)
 Federally certified Disadvantaged Business Enterprise (DBE)

Yes No

1.6 Identify Officials and Principal Owners, if applicable. For each person, include name, title and percentage of ownership. Attach additional pages if necessary. If applicable, reference to relevant SEC filing(s) containing the required information is optional.

Name	Title	Percentage Ownership (Enter 0% if not applicable)

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

II. REPORTING ENTITY INFORMATION

2.0 The Reporting Entity for this questionnaire is:

Note: Select only one.

Legal Business Entity

Note: If selecting this option, “Reporting Entity” refers to the entire Legal Business Entity for the remainder of the questionnaire. (SKIP THE REMAINDER OF SECTION II AND PROCEED WITH SECTION III.)

Organizational Unit within and operating under the authority of the Legal Business Entity

SEE DEFINITIONS OF “REPORTING ENTITY” AND “ORGANIZATIONAL UNIT” FOR ADDITIONAL INFORMATION ON CRITERIA TO QUALIFY FOR THIS SELECTION.

Note: If selecting this option, “Reporting Entity” refers to the Organizational Unit within the Legal Business Entity for the remainder of the questionnaire. (COMPLETE THE REMAINDER OF SECTION II AND ALL REMAINING SECTIONS OF THIS QUESTIONNAIRE.)

IDENTIFYING INFORMATION

a) Reporting Entity Name

Address of the Primary Place of Business (street, city, state, zip code)

Telephone

ext.

b) Describe the relationship of the Reporting Entity to the Legal Business Entity

c) Attach an organizational chart

d) Does the Reporting Entity have a DUNS Number?

Yes No

If “Yes,” enter DUNS Number

e) Identify the designated manager(s) responsible for the business of the Reporting Entity.
For each person, include name and title. Attach additional pages if necessary.

Name

Title

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

INSTRUCTIONS FOR SECTIONS III THROUGH VII

For each “Yes,” provide an explanation of the issue(s), relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). For each “Other,” provide an explanation which provides the basis for not definitively responding “Yes” or “No.” Provide the explanation at the end of the section or attach additional sheets with numbered responses, including the Reporting Entity name at the top of any attached pages.

III. LEADERSHIP INTEGRITY

Within the past five (5) years, has any current or former reporting entity official or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the reporting entity with any government entity been:

3.0 <u>Sanctioned</u> relative to any business or professional permit and/or license?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other
3.1 <u>Suspended, debarred, or disqualified</u> from any <u>government contracting process</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other
3.2 The subject of an <u>investigation</u> , whether open or closed, by any <u>government entity</u> for a civil or criminal violation for any business-related conduct?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other
3.3 Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a <u>judgment</u> for: a) Any business-related activity; or b) Any crime, whether or not business-related, the underlying conduct of which was related to truthfulness?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other

For each “Yes” or “Other” explain:

IV. INTEGRITY – CONTRACT BIDDING

Within the past five (5) years, has the reporting entity:

4.0 Been <u>suspended or debarred</u> from any <u>government contracting process</u> or been <u>disqualified</u> on any government procurement, permit, license, concession, franchise or lease, including, but not limited to, <u>debarment</u> for a violation of New York State Workers’ Compensation or Prevailing Wage laws or New York State Procurement Lobbying Law?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.1 Been subject to a denial or revocation of a government prequalification?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.2 Been denied a contract award or had a bid rejected based upon a <u>non-responsibility finding</u> by a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.3 Had a low bid rejected on a <u>government contract</u> for failure to <u>make good faith efforts</u> on any <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise or Disadvantaged Business Enterprise</u> goal or <u>statutory affirmative action requirements</u> on a previously held contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.4 Agreed to a voluntary exclusion from bidding/contracting with a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.5 Initiated a request to withdraw a bid submitted to a <u>government entity</u> in lieu of responding to an information request or subsequent to a formal request to appear before the <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each “Yes,” explain:

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

V. INTEGRITY – CONTRACT AWARD

Within the past five (5) years, has the reporting entity:

- | | |
|---|--|
| 5.0 Been <u>suspended</u> , cancelled or <u>terminated for cause</u> on any <u>government contract</u> including, but not limited to, a <u>non-responsibility finding</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 5.1 Been subject to an <u>administrative proceeding</u> or civil action seeking specific performance or restitution in connection with any <u>government contract</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 5.2 Entered into a formal monitoring agreement as a condition of a contract award from a <u>government entity</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

For each “Yes,” explain:

VI. CERTIFICATIONS/LICENSES

Within the past five (5) years, has the reporting entity:

- | | |
|---|--|
| 6.0 Had a revocation, <u>suspension</u> or <u>disbarment</u> of any business or professional permit and/or license? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 6.1 Had a denial, decertification, revocation or forfeiture of New York State certification of <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> or federal certification of <u>Disadvantaged Business Enterprise</u> status for other than a change of ownership? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

For each “Yes,” explain:

VII. LEGAL PROCEEDINGS

Within the past five (5) years, has the reporting entity:

- | | |
|--|--|
| 7.0 Been the subject of an <u>investigation</u> , whether open or closed, by any <u>government entity</u> for a civil or criminal violation? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7.1 Been the subject of an indictment, grant of immunity, <u>judgment</u> or conviction (including entering into a plea bargain) for conduct constituting a crime? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7.2 Received any OSHA citation and Notification of Penalty containing a violation classified as <u>serious</u> or <u>willful</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7.3 Had a <u>government entity</u> find a willful prevailing wage or supplemental payment violation or any other willful violation of New York State Labor Law? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7.4 Entered into a consent order with the New York State Department of Environmental Conservation, or received an enforcement determination by any <u>government entity</u> involving a violation of federal, state or local environmental laws? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7.5 Other than previously disclosed:
a) Been subject to fines or penalties imposed by <u>government entities</u> which in the aggregate total \$25,000 or more; or
b) Been convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any <u>government entity</u> ? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

For each “Yes,” explain:

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

VIII. FINANCIAL AND ORGANIZATIONAL CAPACITY	
8.0 Within the past five (5) years, has the <u>Reporting Entity</u> received any <u>formal unsatisfactory performance assessment(s)</u> from any <u>government entity</u> on any contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide an explanation of the issue(s), relevant dates, the <u>government entity</u> involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.1 Within the past five (5) years, has the <u>Reporting Entity</u> had any <u>liquidated damages</u> assessed over \$25,000?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide an explanation of the issue(s), relevant dates, contracting party involved, the amount assessed and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.2 Within the past five (5) years, have any <u>liens</u> or <u>judgments</u> (not including UCC filings) over \$25,000 been filed against the <u>Reporting Entity</u> which remain undischarged?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide an explanation of the issue(s), relevant dates, the Lien holder or Claimant’s name(s), the amount of the <u>lien(s)</u> and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.3 In the last seven (7) years, has the <u>Reporting Entity</u> initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as “Initiated,” “Pending” or “Closed.” Provide answer below or attach additional sheets with numbered responses.	
8.4 During the past three (3) years, has the <u>Reporting Entity</u> failed to file or pay any tax returns required by <u>federal, state or local tax laws</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide the taxing jurisdiction, the type of tax, the liability year(s), the tax liability amount the <u>Reporting Entity</u> failed to file/pay and the current status of the tax liability. Provide answer below or attach additional sheets with numbered responses.	
8.5 During the past three (3) years, has the <u>Reporting Entity</u> failed to file or pay any New York State unemployment insurance returns?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes,” provide the years the <u>Reporting Entity</u> failed to file/pay the insurance, explain the situation and any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.6 During the past three (3) years, has the <u>Reporting Entity</u> had any <u>government audit(s)</u> completed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
a) If “Yes,” did any audit of the <u>Reporting Entity</u> identify any reported significant deficiencies in internal control, fraud, illegal acts, significant violations of provisions of contract or grant agreements, significant abuse or any <u>material disallowance</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If “Yes” to 8.6 a), provide an explanation of the issue(s), relevant dates, the <u>government entity</u> involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

IX. ASSOCIATED ENTITIES

This section pertains to any entity(ies) that either controls or is controlled by the reporting entity. (See definition of “associated entity” for additional information to complete this section.)

<p>9.0 Does the <u>Reporting Entity</u> have any <u>Associated Entities</u>?</p> <p>Note: All questions in this section must be answered if the <u>Reporting Entity</u> is either:</p> <ul style="list-style-type: none"> - An <u>Organizational Unit</u>; or - The entire <u>Legal Business Entity</u> which controls, or is controlled by, any other entity(ies). <p>If “No,” SKIP THE REMAINDER OF SECTION IX AND PROCEED WITH SECTION X.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

<p>9.1 Within the past five (5) years, has any <u>Associated Entity Official</u> or <u>Principal Owner</u> been charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a <u>judgment</u> for:</p> <ul style="list-style-type: none"> a) Any business-related activity; or b) Any crime, whether or not business-related, the underlying conduct of which was related to truthfulness? 	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

If “Yes,” provide an explanation of the issue(s), the individual involved, his/her title and role in the Associated Entity, his/her relationship to the Reporting Entity, relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s).

<p>9.2 Does any <u>Associated Entity</u> have any currently undischarged <u>federal</u>, New York State, New York City or New York local government <u>liens</u> or <u>judgments</u> (not including <u>UCC filings</u>) over \$50,000?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

If “Yes,” provide an explanation of the issue(s), identify the Associated Entity’s name(s), EIN(s), primary business activity, relationship to the Reporting Entity, relevant dates, the Lien holder or Claimant’s name(s), the amount of the lien(s) and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.

<p>9.3 Within the past five (5) years, has any <u>Associated Entity</u>:</p>	
<p>a) Been <u>disqualified</u>, <u>suspended</u> or <u>debarred</u> from any <u>federal</u>, New York State, New York City or other New York local <u>government contracting process</u>?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>b) Been denied a contract award or had a bid rejected based upon a <u>non-responsibility finding</u> by any <u>federal</u>, New York State, New York City, or New York local <u>government entity</u>?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>c) Been <u>suspended</u>, <u>cancelled</u> or <u>terminated for cause</u> (including for <u>non-responsibility</u>) on any <u>federal</u>, New York State, New York City or New York local <u>government contract</u>?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>d) Been the subject of an <u>investigation</u>, whether open or closed, by any <u>federal</u>, New York State, New York City, or New York local <u>government entity</u> for a civil or criminal violation with a penalty in excess of \$500,000?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>e) Been the subject of an indictment, grant of immunity, <u>judgment</u>, or conviction (including entering into a plea bargain) for conduct constituting a crime?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>f) Been convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any <u>federal</u>, New York State, New York City, or New York local <u>government entity</u>?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>g) Initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each “Yes,” provide an explanation of the issue(s), identify the Associated Entity’s name(s), EIN(s), primary business activity, relationship to the Reporting Entity, relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

X. FREEDOM OF INFORMATION LAW (FOIL)

10. Indicate whether any information supplied herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL). Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL.	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

If "Yes," indicate the question number(s) and explain the basis for the claim.

XI. AUTHORIZED CONTACT FOR THIS QUESTIONNAIRE

Name	Telephone	Fax
	ext.	
Title	Email	

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY**

Certification

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or Federal Law, as well as a finding of non-responsibility, contract suspension or contract termination.

The undersigned certifies that he/she:

- is knowledgeable about the submitting Business Entity’s business and operations;
- has read and understands all of the questions contained in the questionnaire;
- has not altered the content of the questionnaire in any manner;
- has reviewed and/or supplied full and complete responses to each question;
- to the best of his/her knowledge, information and belief, confirms that the Business Entity’s responses are true, accurate and complete, including all attachments, if applicable;
- understands that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- is under an obligation to update the information provided herein to include any material changes to the Business Entity’s responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Sworn to before me this _____ day of _____, 20____;

_____ Notary Public



Contractor Certification to Covered Agency

(Pursuant to Section 5-a of the Tax Law, as amended, effective April 26, 2006)

ST-220-CA

(12/11)

For information, consult Publication 223, *Questions and Answers Concerning Tax Law Section 5-a* (see *Need Help?* on back).

Contractor name		For covered agency use only Contract number or description	
Contractor's principal place of business	City	State	ZIP code
Contractor's mailing address (if different than above)		Estimated contract value over the full term of contract (but not including renewals)	
Contractor's federal employer identification number (EIN)	Contractor's sales tax ID number (if different from contractor's EIN)		\$
Contractor's telephone number	Covered agency name		
Covered agency address		Covered agency telephone number	

I, _____, hereby affirm, under penalty of perjury, that I am _____

(name)

(title)

of the above-named contractor, that I am authorized to make this certification on behalf of such contractor, and I further certify that:

(Mark an X in only one box)

The contractor has filed Form ST-220-TD with the Department of Taxation and Finance in connection with this contract and, to the best of contractor's knowledge, the information provided on the Form ST-220-TD, is correct and complete.

The contractor has previously filed Form ST-220-TD with the Tax Department in connection with _____

(insert contract number or description)

and, to the best of the contractor's knowledge, the information provided on that previously filed Form ST-220-TD, is correct and complete as of the current date, and thus the contractor is not required to file a new Form ST-220-TD at this time.

Sworn to this ____ day of _____, 20 ____

(sign before a notary public)

(title)

Instructions

General information

Tax Law section 5-a was amended, effective April 26, 2006. On or after that date, in all cases where a contract is subject to Tax Law section 5-a, a contractor must file (1) Form ST-220-CA, *Contractor Certification to Covered Agency*, with a covered agency, and (2) Form ST-220-TD with the Tax Department before a contract may take effect. The circumstances when a contract is subject to section 5-a are listed in Publication 223, Q&A 3. See *Need help?* for more information on how to obtain this publication. In addition, a contractor must file a new Form ST-220-CA with a covered agency before an existing contract with such agency may be renewed.

Note: Form ST-220-CA must be signed by a person authorized to make the certification on behalf of the contractor, and the acknowledgement on page 2 of this form must be completed before a notary public.

When to complete this form

As set forth in Publication 223, a contract is subject to section 5-a, and you must make the required certification(s), if:

- i. The procuring entity is a *covered agency* within the meaning of the statute (see Publication 223, Q&A 5);
- ii. The contractor is a *contractor* within the meaning of the statute (see Publication 223, Q&A 6); and
- iii. The contract is a *contract* within the meaning of the statute. This is the case when it (a) has a value in excess of \$100,000 and (b) is a contract for *commodities* or *services*, as such terms are defined for purposes of the statute (see Publication 223, Q&A 8 and 9).

Furthermore, the procuring entity must have begun the solicitation to purchase on or after January 1, 2005, and the resulting contract must have been awarded, amended, extended, renewed, or assigned *on or after April 26, 2006* (the effective date of the section 5-a amendments).

Individual, Corporation, Partnership, or LLC Acknowledgment

STATE OF }
: SS.:
COUNTY OF }

On the ___ day of _____ in the year 20___, before me personally appeared _____,
known to me to be the person who executed the foregoing instrument, who, being duly sworn by me did depose and say that
_he resides at _____,
Town of _____,
County of _____,
State of _____; and further that:

[Mark an X in the appropriate box and complete the accompanying statement.]

- (If an individual): _he executed the foregoing instrument in his/her name and on his/her own behalf.
(If a corporation): _he is the _____
of _____, the corporation described in said instrument; that, by authority of the Board
of Directors of said corporation, _he is authorized to execute the foregoing instrument on behalf of the corporation for
purposes set forth therein; and that, pursuant to that authority, _he executed the foregoing instrument in the name of and on
behalf of said corporation as the act and deed of said corporation.
(If a partnership): _he is a _____
of _____, the partnership described in said instrument; that, by the terms of said
partnership, _he is authorized to execute the foregoing instrument on behalf of the partnership for purposes set forth
therein; and that, pursuant to that authority, _he executed the foregoing instrument in the name of and on behalf of said
partnership as the act and deed of said partnership.
(If a limited liability company): _he is a duly authorized member of _____,
LLC, the limited liability company described in said instrument; that _he is authorized to execute the foregoing instrument
on behalf of the limited liability company for purposes set forth therein; and that, pursuant to that authority, _he executed
the foregoing instrument in the name of and on behalf of said limited liability company as the act and deed of said limited
liability company.

Notary Public

Registration No.

Privacy notification

The Commissioner of Taxation and Finance may collect and maintain
personal information pursuant to the New York State Tax Law, including but
not limited to, sections 5-a, 171, 171-a, 287, 308, 429, 475, 505, 697, 1096,
1142, and 1415 of that Law; and may require disclosure of social security
numbers pursuant to 42 USC 405(c)(2)(C)(i).

This information will be used to determine and administer tax liabilities
and, when authorized by law, for certain tax offset and exchange of tax
information programs as well as for any other lawful purpose.

Information concerning quarterly wages paid to employees is provided
to certain state agencies for purposes of fraud prevention, support
enforcement, evaluation of the effectiveness of certain employment and
training programs and other purposes authorized by law.

Failure to provide the required information may subject you to civil or
criminal penalties, or both, under the Tax Law.

This information is maintained by the Manager of Document Management,
NYS Tax Department, W A Harriman Campus, Albany NY 12227; telephone
(518) 457-5181.

Need help?



- Visit our Web site at www.tax.ny.gov
• get information and manage your taxes online
• check for new online services and features



Telephone assistance

Sales Tax Information Center: (518) 485-2889
To order forms and publications: (518) 457-5431

Text Telephone (TTY) Hotline (for persons with
hearing and speech disabilities using a TTY): (518) 485-5082



Persons with disabilities: In compliance with the
Americans with Disabilities Act, we will ensure that our
lobbies, offices, meeting rooms, and other facilities are
accessible to persons with disabilities. If you have questions
about special accommodations for persons with disabilities, call the
information center.



Contractor Certification

(Pursuant to Tax Law Section 5-a, as amended, effective April 26, 2006)

For information, consult Publication 223, *Questions and Answers Concerning Tax Law Section 5-a* (see *Need help?* below).

Contractor name				
Contractor's principal place of business		City	State	ZIP code
Contractor's mailing address (if different than above)		City	State	ZIP code
Contractor's federal employer identification number (EIN)	Contractor's sales tax ID number (if different from contractor's EIN)		Contractor's telephone number ()	
Covered agency or state agency	Contract number or description		Covered agency telephone number ()	
Covered agency address	City	State	ZIP code	
Is the estimated contract value over the full term of the contract (but not including renewals) more than \$100,000?				
Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown at this time <input type="checkbox"/>				

General information

Tax Law section 5-a, as amended, effective April 26, 2006, requires certain contractors awarded certain state contracts valued at more than \$100,000 to certify to the Tax Department that they are registered to collect New York State and local sales and compensating use taxes, if they made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000, measured over a specified period. In addition, contractors must certify to the Tax Department that each affiliate and subcontractor exceeding such sales threshold during a specified period is registered to collect New York State and local sales and compensating use taxes. Contractors must also file Form ST-220-CA, *Contractor Certification to Covered Agency*, certifying to the procuring state entity that they filed Form ST-220-TD with the Tax Department and that the information contained on Form ST-220-TD is correct and complete as of the date they file Form ST-220-CA.

All sections must be completed including all fields on the top of this page, all sections on page 2, Schedule A on page 3, if applicable, and *Individual, Corporation, Partnership, or LLC Acknowledgement* on page 4. If you do not complete these areas, the form will be returned to you for completion.

For more detailed information regarding this form and Tax Law section 5-a, see Publication 223, *Questions and Answers Concerning Tax Law Section 5-a, (as amended, effective April 26, 2006)*. See *Need help?* for more information on how to obtain this publication.

Note: Form ST-220-TD must be signed by a person authorized to make the certification on behalf of the contractor, and the acknowledgement on page 4 of this form must be completed before a notary public.

Mail completed form to:

**NYS TAX DEPARTMENT
DATA ENTRY SECTION
W A HARRIMAN CAMPUS
ALBANY NY 12227-0826**

Privacy notification

New York State Law requires all government agencies that maintain a system of records to provide notification of the legal authority for any request, the principal purpose(s) for which the information is to be collected, and where it will be maintained. To view this information, visit our Web site, or, if you do not have Internet access, call and request Publication 54, *Privacy Notification*. See *Need help?* for the Web address and telephone number.

Need help?



Visit our Web site at www.tax.ny.gov

- get information and manage your taxes online
- check for new online services and features



Telephone assistance

Sales Tax Information Center: (518) 485-2889

To order forms and publications: (518) 457-5431

Text Telephone (TTY) Hotline (for persons with hearing and speech disabilities using a TTY): (518) 485-5082



Persons with disabilities: In compliance with the Americans with Disabilities Act, we will ensure that our lobbies, offices, meeting rooms, and other facilities are accessible to persons with disabilities. If you have questions about special accommodations for persons with disabilities, call the information center.

I, _____, hereby affirm, under penalty of perjury, that I am _____
(name) *(title)*
of the above-named contractor, and that I am authorized to make this certification on behalf of such contractor.

Complete Sections 1, 2, and 3 below. Make only one entry in each section.

Section 1 – Contractor registration status

- The contractor has made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made. The contractor is registered to collect New York State and local sales and compensating use taxes with the Commissioner of Taxation and Finance pursuant to Tax Law sections 1134 and 1253, and is listed on Schedule A of this certification.
- The contractor has not made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made.

Section 2 – Affiliate registration status

- The contractor does not have any affiliates.
- To the best of the contractor's knowledge, the contractor has one or more affiliates having made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made, and each affiliate exceeding the \$300,000 cumulative sales threshold during such quarters is registered to collect New York State and local sales and compensating use taxes with the Commissioner of Taxation and Finance pursuant to Tax Law sections 1134 and 1253. The contractor has listed each affiliate exceeding the \$300,000 cumulative sales threshold during such quarters on Schedule A of this certification.
- To the best of the contractor's knowledge, the contractor has one or more affiliates, and each affiliate has not made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made.

Section 3 – Subcontractor registration status

- The contractor does not have any subcontractors.
- To the best of the contractor's knowledge, the contractor has one or more subcontractors having made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made, and each subcontractor exceeding the \$300,000 cumulative sales threshold during such quarters is registered to collect New York State and local sales and compensating use taxes with the Commissioner of Taxation and Finance pursuant to Tax Law sections 1134 and 1253. The contractor has listed each subcontractor exceeding the \$300,000 cumulative sales threshold during such quarters on Schedule A of this certification.
- To the best of the contractor's knowledge, the contractor has one or more subcontractors, and each subcontractor has not made sales delivered by any means to locations within New York State of tangible personal property or taxable services having a cumulative value in excess of \$300,000 during the four sales tax quarters which immediately precede the sales tax quarter in which this certification is made.

Sworn to this ____ day of _____, 20 ____

(sign before a notary public)

(title)



NEW YORK STATE OFFICE OF THE STATE COMPTROLLER
SUBSTITUTE FORM W-9:
REQUEST FOR TAXPAYER IDENTIFICATION NUMBER & CERTIFICATION

TYPE OR PRINT INFORMATION NEATLY. PLEASE REFER TO INSTRUCTIONS FOR MORE INFORMATION.

Part I: Vendor Information

1. Legal Business Name:

2. Business name/disregarded entity name, if different from Legal Business Name:

3. Entity Type (Check one only):

- Individual Sole Proprietor
 Partnership
 Limited Liability Co.
 Corporation
 Not For Profit
 Trusts/Estates
 Federal, State or Local Government
 Public Authority
 Disregarded Entity
 Other _____

Exempt Payee

Part II: Taxpayer Identification Number (TIN) & Taxpayer Identification Type

1. Enter your TIN here: (*DO NOT USE DASHES*)
 See instructions.

--	--	--	--	--	--	--	--	--	--

2. Taxpayer Identification Type (check appropriate box):

- Employer ID No. (EIN)
 Social Security No. (SSN)
 Individual Taxpayer ID No. (ITIN)
 N/A (Non-United States Business Entity)

Part III: Address

1. Remittance Address:

2. Ordering Address:

Number, Street, and Apartment or Suite Number

Number, Street, and Apartment or Suite Number

City, State, and Nine Digit Zip Code or Country

City, State, and Nine Digit Zip Code or Country

Email Address

Part IV: Vendor Primary Contact Information – Executive Authorized to Represent the Vendor

Primary Contact Name: _____ Title: _____

Email Address: _____ Phone Number: _____

Part V: Certification and Exemption from Backup Withholding

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (TIN), and
2. I am a U.S. citizen or other U.S. person, and
3. (Check one only):
 - I am not subject to backup withholding.** I am (a) exempt from back up withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding), or
 - I am subject to backup withholding.** I have been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends, and I have not been notified by the IRS that I am no longer subject to back withholding.

Sign Here:

Signature	Title	Date
Print Preparer's Name	Phone Number	Email Address

DO NOT SUBMIT FORM TO IRS – SUBMIT FORM TO NYS ONLY AS DIRECTED

NYS Office of the State Comptroller Instructions for Completing Substitute Form W-9

New York State (NYS) must obtain your correct Taxpayer Identification Number (TIN) to report income paid to you or your organization. NYS Office of the State Comptroller uses the Substitute Form W-9 to obtain certification of your TIN in order to ensure accuracy of information contained in its payee/vendor database and to avoid backup withholding.¹ We ask for the information on the Substitute Form W-9 to carry out the Internal Revenue laws of the United States. You are required to give us the information.

Any payee/vendor who wishes to do business with New York State must complete the Substitute Form W-9. Substitute Form W-9 is the only acceptable documentation. We will not accept IRS Form W-9.

Part I: Vendor Information

1. **Legal Business Name:** For individuals, enter the name of the person who will do business with NYS as it appears on the Social Security card or other required Federal tax documents. An organization should enter the name shown on its charter or other legal documents that created the organization. Do not abbreviate names.
2. **Business name/disregarded entity name, if different from Legal Business Name:** Enter your DBA name or another name your entity is known by.
3. **Entity Type:** Check the Entity Type doing business with New York State.

Part II: Taxpayer Identification Number (TIN) and Taxpayer Identification Type

The TIN provided must match the name in the "Legal Business Name" box to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, refers to IRS W-9 instructions for additional information. For other entities, it is your employer identification number (EIN). If you do not have a number or if the account is in more than one name, refer to IRS W-9 instructions for additional information.

1. **Taxpayer Identification Number:** Enter your nine-digit Social Security Number, Individual Taxpayer Identification Number (ITIN) or Employer Identification Number (EIN).
2. **Taxpayer Identification Type:** Check the type of identification number provided.

Part III: Address

1. **Remittance Address:** Enter the address where payments, 1099s, if applicable, and official correspondence should be mailed. This will become the default address.
2. **Ordering Address:** Enter the address where purchase orders should be sent. Please note that purchase orders will be sent via email by default.

Part IV: Vendor Primary Contact Information

Please provide the contact information for an executive at your organization. This individual should be the person who makes legal and financial decisions for your organization. Name, phone number and email address are required.

Part V: Certification and Exemption from Backup Withholding

Check the appropriate box indicating your exemption status from backup withholding. Individuals and sole proprietors are not exempt from backup withholding. Corporations are exempt from backup withholding for certain types of payments. Refer to IRS Form W-9 instructions for additional information. The signature should be provided by the individual, owner, officer, legal representative, or other authorized person of the entity listed on the form. Certain exceptions to the signature requirement are listed in the IRS instructions for form W-9.

¹ According to IRS Regulations, OSC must withhold 28% of all payments if a payee/vendor fails to provide OSC its certified TIN. The Substitute Form W-9 certifies a payee/vendor's TIN.

APPENDIX A

STANDARD CLAUSES FOR NEW YORK STATE CONTRACTS

**PLEASE RETAIN THIS DOCUMENT
FOR FUTURE REFERENCE.**

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STANDARD CLAUSES FOR NYS CONTRACTS

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "the contract" or "this contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

1. EXECUTORY CLAUSE. In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. NON-ASSIGNMENT CLAUSE. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. COMPTROLLER'S APPROVAL. In accordance with Section 112 of the State Finance Law (or, if this contract is with the State University or City University of New York, Section 355 or Section 6218 of the Education Law), if this contract exceeds \$50,000 (or the minimum thresholds agreed to by the Office of the State Comptroller for certain S.U.N.Y. and C.U.N.Y. contracts), or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds \$10,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller's approval of contracts let by the Office of General Services is required when such contracts exceed \$85,000 (State Finance Law Section 163.6-a). However, such pre-approval shall not be required for any contract established as a centralized contract through the Office of General Services or for a purchase order or other transaction issued under such centralized contract.

4. WORKERS' COMPENSATION BENEFITS. In accordance with Section 142 of the State Finance Law, this

contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. NON-DISCRIMINATION REQUIREMENTS. To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex (including gender identity or expression), national origin, sexual orientation, military status, age, disability, predisposing genetic characteristics, marital status or domestic violence victim status. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of \$50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

6. WAGE AND HOURS PROVISIONS. If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of

any State approved sums due and owing for work done upon the project.

7. NON-COLLUSIVE BIDDING CERTIFICATION. In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

8. INTERNATIONAL BOYCOTT PROHIBITION. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds \$5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2NYCRR 105.4).

9. SET-OFF RIGHTS. The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

10. RECORDS. The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, "the Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this

contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION.

(a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN.

In accordance with Section 312 of the Executive Law and 5 NYCRR 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of \$25,000.00,

whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of \$100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of \$100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "a", "b", and "c" above, in every subcontract over \$25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment

opportunity which effectuates the purpose of this section. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. CONFLICTING TERMS. In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

14. GOVERNING LAW. This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. LATE PAYMENT. Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. NO ARBITRATION. Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. SERVICE OF PROCESS. In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS. The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in §165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES.

In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992. It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business
Albany, New York 12245
Telephone: 518-292-5100
Fax: 518-292-5884
email: opa@esd.ny.gov

A directory of certified minority and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue
New York, NY 10017
212-803-2414
email: mwbecertification@esd.ny.gov
<https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp>

The Omnibus Procurement Act of 1992 requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than \$1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. RECIPROCITY AND SANCTIONS PROVISIONS.

Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 15, 2002, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii. Contact NYS Department of Economic Development for a current list of jurisdictions subject to this provision.

22. COMPLIANCE WITH NEW YORK STATE INFORMATION SECURITY BREACH AND NOTIFICATION ACT.

Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law Section 899-aa; State Technology Law Section 208).

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW.

If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4-g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded

the contract, the Department of Civil Service and the State Comptroller.

24. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law Sections 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law Sections 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS.

To the extent this agreement is a contract as defined by Tax Law Section 5-a, if the contractor fails to make the certification required by Tax Law Section 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law §165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at:
<http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf>

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not

limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

APPENDIX B

GENERAL SPECIFICATIONS

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GENERAL

1. ETHICS COMPLIANCE All Bidders/Contractors and their employees must comply with the requirements of Sections 73 and 74 of the Public Officers Law, other State codes, rules, regulations and executive orders establishing ethical standards for the conduct of business with New York State. In signing the Bid, Bidder certifies full compliance with those provisions for any present or future dealings, transactions, sales, contracts, services, offers, relationships, etc., involving New York State and/or its employees. Failure to comply with those provisions may result in disqualification from the bidding process, termination of contract, and/or other civil or criminal proceedings as required by law.

2. DEFINITIONS Terms used herein shall have the following meanings:

a. AUTHORIZED USER Authorized User shall have the meaning set forth in State Finance Law Section 163(1)(k) and includes, but is not limited to, New York State Agencies, political subdivisions, local governments, public authorities, public school and fire districts, public and nonprofit libraries, and certain other nonpublic/nonprofit organizations.

b. BID A response to the Solicitation submitted by a Bidder to provide Products.

c. BIDDER Any person or entity who submits a response to the Solicitation. At the time that a Bidder executes a Contract with the State, the Bidder shall become a "Contractor." See also "Contractor."

d. BID SPECIFICATIONS A written description drafted by OGS or an Authorized User setting forth the specific terms of the intended procurement, which may include: physical or functional characteristics, the nature of a Product, any description of the work to be performed, Products to be provided, the necessary qualifications of the Bidder, the capacity and capability of the Bidder to successfully carry out the proposed Contract, or the process for achieving specific results and/or anticipated outcomes or any other requirement necessary to perform work. Where this Appendix B is incorporated in negotiated Contracts that have not been competitively solicited, the term "Bid Specifications" shall be deemed to refer to the terms and conditions set forth in the negotiated Contract and associated documentation.

e. COMMISSIONER The Commissioner of OGS or his or her designee, or, in the case of Bid Specifications issued by an Authorized User, the head of such Authorized User or his or her authorized representative.

f. CONTRACT The writings that contain the agreement of the Commissioner and the Bidder/Contractor setting forth the total legal obligation between the parties as determined by applicable rules of law, and which most typically include the following classifications of public procurements:

- 1. Agency Specific Contracts** Contracts where the written description for a Product or a particular scope of work is described and defined to meet the needs of one or more Authorized Users.
- 2. Centralized Contracts** Single- or multiple-award Contracts where the written description for a Product or general scope of work is described and defined by OGS to meet the needs of Authorized Users. Centralized Contracts may be awarded through multiple awards or through adoption of another

jurisdiction's contract or on a sole source, single source, emergency, or competitive basis. Once established, procurements may be made from the selected Contractors without further competition or Mini-Bid unless otherwise required by the Contract.

3. Back-Drop Contracts Multiple-award Centralized Contracts where OGS provides a written description for a Product or general scope of work to meet the needs of Authorized Users. Bids may be submitted either at a date and time certain or may be accepted on a continuous or periodic recruitment basis, as set forth in the Solicitation. Selection of a Contractor from among Back-Drop contract holders for an actual Product, project or particular scope of work may be subsequently made as set forth in the Contract.

4. Piggyback Contract A Contract let by any department, agency or instrumentality of the United States government, or any department, agency, office, political subdivision or instrumentality of any state or group of states that is adopted and extended for use by OGS in accordance with the requirements of the State Finance Law.

5. Contract Letter A letter to the successful Bidder indicating acceptance of its Bid in response to a Solicitation. Unless otherwise specified, the issuance of a letter of acceptance forms a Contract but is not an order for Product, and the Contractor should not take any action with respect to actual Contract deliveries except on the basis of Purchase Orders sent from Authorized Users.

g. CONTRACT AWARD NOTIFICATION An announcement to Authorized Users that a Contract has been established.

h. CONTRACTOR Any successful Bidder to whom a Contract has been awarded by the Commissioner.

i. DOCUMENTATION The complete set of manuals (e.g., user, installation, instruction or diagnostic manuals) in either hard or electronic copy, that are necessary to enable an Authorized User to properly test, install, operate and enjoy full use of the Product.

j. ENTERPRISE The total business operations in the United States of an Authorized User without regard to geographic location where such operations are performed or the entity actually performing such operations on behalf of the Authorized User.

k. ENTERPRISE LICENSE A license grant of unlimited rights to deploy, access, use and execute Product anywhere within the Enterprise up to the maximum capacity stated on the Purchase Order or in the Contract.

l. ERROR CORRECTIONS Machine executable software code furnished by Contractor which corrects the Product so as to conform to the applicable warranties, performance standards and/or obligations of the Contractor.

m. GROUP A classification of a Product that is designated by OGS.

n. INVITATION FOR BIDS (IFB) A type of Solicitation that is most typically used for procurements where requirements can be stated and award will be made based on lowest price to the responsive and responsible Bidder or Bidders.

o. LICENSED SOFTWARE Software transferred upon the terms and conditions set forth in the Contract. "Licensed Software" includes

Error Corrections, upgrades, enhancements or New Licensed Software Releases, and any deliverables due under a technical support/maintenance or service contract (e.g., patches, fixes, PTFs, programs, code or data conversion, or custom programming).

p. LICENSEE An Authorized User who acquires Product from Contractor by issuing a Purchase Order in accordance with the terms and conditions of the Contract; provided that, for purposes of compliance with an individual license, the term "Licensee" shall be deemed to refer separately to the individual Authorized User who took receipt of and who is executing the Product, and who shall be solely responsible for performance and liabilities incurred. In the case of acquisitions by State Agencies, the Licensee shall be the State of New York.

q. LICENSE EFFECTIVE DATE The date Product is delivered to an Authorized User. Where a License involves Licensee's right to copy a previously licensed and delivered master copy of a program, the License Effective Date for additional copies shall be deemed to be the date on which the Purchase Order is executed.

r. LICENSOR A Contractor who transfers rights in proprietary Product to Authorized Users in accordance with the rights and obligations specified in the Contract.

s. MINI-BID A document used by an Authorized User containing transaction-specific requirements soliciting responses from Contractors previously qualified under a Centralized Contract for such Products.

t. NEW LICENSED SOFTWARE RELEASES (Licensed Software Revisions) Any commercially released revisions to the licensed version of Licensed Software as may be generally offered and available to Authorized Users who are current on technical support/maintenance. New Licensed Software Releases involve a substantial revision of functionality from a previously released version of the Licensed Software. Updates are provided when available, and Contractor is under no obligation to develop any future Product or functionality.

u. OGS The New York State Office of General Services.

v. PRODUCTS Items or deliverables under any Solicitation or Contract and may include commodities, services and/or technology.

w. PURCHASE ORDER The Authorized User's fiscal form or format that is used when making a purchase (e.g., formal written Purchase Order, Purchasing Card, electronic Purchase Order, or other authorized instrument).

x. REQUEST FOR PROPOSALS (RFP) A type of Solicitation that is used for procurements where factors in addition to cost are considered and weighted in awarding the contract and where the award will be made based on "best value," as defined by the State Finance Law, to the responsive and responsible Bidder(s).

y. REQUEST FOR QUOTATION (RFQ) A type of Solicitation that can be used when a formal Bid opening is not required (e.g., discretionary, sole source, single source or emergency purchases).

z. RESPONSIBLE BIDDER A Bidder that is determined to have financial and organizational capacity, legal authority, satisfactory previous performance, skill, judgment and integrity, and that is found to be competent, reliable and experienced, as determined by the Commissioner. For purposes of being deemed responsible, a Bidder must also be determined to be in compliance with Sections 139-j and MAY 2015

139-k of the State Finance Law relative to restrictions on contacts during the procurement process and disclosure of contacts and prior findings of non-responsibility under these statutes.

aa. RESPONSIVE BIDDER A Bidder meeting the specifications or requirements prescribed in the Solicitation, as determined by the OGS Commissioner.

bb. SINGLE SOURCE A procurement where two or more Bidders can supply the required Product, and the Commissioner may award the contract to one Bidder over the other.

cc. SITE The location (street address) where Product will be delivered or executed.

dd. SOLE SOURCE A procurement where only one Bidder is capable of supplying the required Product.

ee. SOLICITATION Writings by the State setting forth the scope, terms, conditions and technical specifications for a procurement of Product. The procurement may be undertaken on a competitive or non-competitive basis. Such writings typically include, but are not limited to: Invitation for Bids (IFB), Request for Quotations (RFQ), Request for Proposals (RFP), addenda or amendments thereto, and terms and conditions that are incorporated by reference, including but not limited to Appendix A (Standard Clauses for NYS Contracts), Appendix B (General Specifications), and identified attachments. Where the procurement is undertaken on a non-competitive basis, the term "Solicitation" shall be deemed to refer to all the terms and conditions identified by the State.

ff. SOURCE CODE The programming statements or instructions written and expressed in any language understandable by a human being skilled in the art which are translated by a language compiler to produce executable machine object code.

gg. STATE State of New York.

hh. STATE AGENCY OR AGENCIES The State of New York, acting by or through one or more departments, boards, commissions, offices or institutions of the State of New York.

ii. SUBCONTRACTOR Any individual or legal entity (including but not limited to sole proprietor, partnership, limited liability company, firm or corporation) who has entered into a contract, express or implied, for the performance of a portion of a Contract with a Contractor.

jj. TERMS OF LICENSE The terms and conditions set forth in the Contract that are in effect and applicable to a Purchase Order at the time of order placement.

kk. VIRUS Any computer code, whether or not written or conceived by Contractor, that disrupts, disables, harms, or otherwise impedes in any manner the operation of the Product, or any other associated software, firmware, hardware, or computer system (such as local area or wide-area networks), including aesthetic disruptions or distortions, but does not include security keys or other such devices installed by Product manufacturer.

BID SUBMISSION

3. INTERNATIONAL BIDDING All Bids, including all information and Product required by the Solicitation or provided as explanation thereof, shall be submitted in English. All prices shall be

expressed, and all payments shall be made, in United States Dollars (\$US). Any Bids submitted which do not meet the above criteria will be rejected.

4. BID OPENING Bids may, as applicable, be opened publicly. The Commissioner reserves the right at any time to postpone or cancel a scheduled Bid opening.

5. LATE BIDS REJECTED For purposes of Bid openings held and conducted by OGS, a Bid must be received in such place as may be designated in the Solicitation or, if no place is specified, in the OGS Mailroom located in the Empire State Plaza, Albany, New York 12242, at or before the date and time established in the Solicitation for the Bid opening. For purposes of Bid openings held and conducted by Authorized Users other than OGS, the term late Bid is defined as a Bid not received in the location established in the Bid Specifications at or before the date and time specified for the Bid opening.

Any Bid received at the specified location after the time specified will be considered a late Bid. A late Bid shall not be considered for award unless: (i) no timely Bids meeting the requirements of the Solicitation are received or, (ii) in the case of a multiple award, an insufficient number of timely Bids were received to satisfy the multiple award; and acceptance of the late Bid is in the best interests of the Authorized Users. Bids submitted for continuous or periodic recruitment contract awards must meet the submission requirements associated with the Solicitation. Delays in United States mail deliveries or any other means of transmittal, including couriers or agents of the Authorized User, shall not excuse late Bid submissions. Similar types of delays, including but not limited to, bad weather, or security procedures for parking and building admittance, shall not excuse late Bid submissions. Determinations relative to Bid timeliness shall be at the sole discretion of the Commissioner.

6. EXTRANEOUS TERMS Bids must conform to the terms set forth in the Solicitation. Extraneous terms or material deviations (including additional, inconsistent, conflicting or alternative terms) may render the Bid non-responsive and may result in rejection of the Bid.

Extraneous terms submitted on standard, pre-printed forms (including but not limited to: product literature, order forms, license agreements, contracts or other documents) that are attached or referenced with submissions shall not be considered part of the Bid or resulting Contract, but shall be deemed included for informational or promotional purposes only.

Only those extraneous terms that meet all the following requirements may be considered as having been submitted as part of the Bid:

- a.** Each proposed extraneous term (addition, deletion, counter-offer, deviation, or modification) must be specifically enumerated in a writing which is not part of a pre-printed form;
- b.** The writing must identify the particular Solicitation requirement (if any) that Bidder rejects or proposes to modify by inclusion of the extraneous term; and
- c.** The Bidder shall enumerate the proposed addition, deletion, counter-offer, deviation, or modification from the Solicitation, and the reasons therefor.

No extraneous terms, whether or not deemed "material," shall be incorporated into a Contract or Purchase Order unless submitted in accordance with the above and the Commissioner or Authorized User expressly accepts each such terms in writing. Acceptance and/or MAY 2015

processing of the Bid shall not constitute such written acceptance of extraneous terms.

7. CONFIDENTIAL/TRADE SECRET MATERIALS

a. CONTRACTOR Confidential, trade secret or proprietary materials as defined by the laws of the State of New York must be clearly marked and identified as such upon submission by the Bidder. Marking the Bid as "confidential" or "proprietary" on its face or in the document header or footer shall not be considered by the Commissioner or Authorized User to be sufficient without specific justification as to why disclosure of particular information in the Bid would cause substantial injury to the competitive position of the Bidder. Bidders/Contractors intending to seek an exemption from disclosure of these materials under the Freedom of Information Law must request the exemption in writing, setting forth the reasons for the claimed exemption. The State's receipt/acceptance of the claimed materials does not constitute a determination on the exemption request, which determination will be made in accordance with statutory procedures. Properly identified information that has been designated confidential, trade secret, or proprietary by the Bidder will not be disclosed except as may be required by the Freedom of Information Law or other applicable State and federal laws.

b. COMMISSIONER OR AUTHORIZED USER Contractor warrants, covenants and represents that any confidential information obtained by Contractor, its agents, Subcontractors, officers, distributors, resellers or employees in the course of performing its obligations, including without limitation, security procedures, business operations information, or commercial proprietary information in the possession of the State or any Authorized User hereunder or received from another third party, will not be divulged to any third parties without the written consent of the Commissioner or Authorized User. Contractor shall not be required to keep confidential any such material that is publicly available through no fault of Contractor, independently developed by Contractor without reliance on confidential information of the Authorized User, or otherwise obtained under the Freedom of Information Law or other applicable New York State laws and regulations. This warranty shall survive termination of this Contract. Contractor further agrees to take commercially reasonable steps to inform its agents, Subcontractors, officers, distributors, resellers or employees of the obligations arising under this clause to ensure such confidentiality.

8. PREVAILING WAGE RATES - PUBLIC WORKS AND BUILDING SERVICES CONTRACTS If any portion of work being solicited is subject to the prevailing wage rate provisions of the Labor Law, the following shall apply:

a. PREVAILING WAGE RATE APPLICABLE TO BIDS A copy of the applicable prevailing wage rate schedule is attached to the Solicitation and may also be obtained by visiting www.labor.ny.gov and typing in the search box: Prevailing Wage Schedule Request. Bidders must submit Bids which are based upon the prevailing hourly wages, and supplements in cash or equivalent benefits (i.e., fringe benefits and any cash or non-cash compensation which are not wages, as defined by law) that equal or exceed the applicable prevailing wage rate(s) for the location where the work is to be performed. Bidders may not submit Bids based upon hourly wage rates and supplements below the applicable prevailing wage rates as established by the New York State Department of Labor. Bids that fail to comply with this requirement will be disqualified.

b. WAGE RATE PAYMENTS/CHANGES DURING CONTRACT TERM The wages to be paid under any resulting Contract shall not be less than the prevailing rate of wages and supplements as set forth by law. It is required that the Contractor keep

informed of all changes in the prevailing wage rates during the Contract term that apply to the classes of individuals supplied by the Contractor on any projects resulting from this Contract, subject to the provisions of the Labor Law. Contractor is solely liable for and must pay such required prevailing wage adjustments during the Contract term for its employees as required by law and is responsible for ensuring any Subcontractors utilized on the Contract also comply with the prevailing wage provisions of the New York State Labor Law.

c. ARTICLE 8 CONSTRUCTION/PUBLIC WORKS CONTRACTS In compliance with Article 8, Section 220 of the New York State Labor Law:

i. Posting The Contractor must publicly post on the work Site, in a prominent and accessible place, a legible schedule of the prevailing wage rates and supplements.

ii. Payroll Records Contractors and Subcontractors must keep original payrolls or transcripts subscribed and affirmed as true under the penalties of perjury as required by law. For public works contracts over \$25,000 where the Contractor maintains no regular place of business in the State, such records must be kept at the work Site. For building services contracts, such records must be kept at the work Site while work is being performed.

iii. Submission of Certified Payroll Transcripts for Public Works Contracts Only Contractors and Subcontractors on public works Contracts must submit monthly payroll transcripts to the Authorized User issuing the Purchase Order for the work. This provision does not apply to Article 9 of the Labor Law building services contracts.

iv. Day's Labor No laborers, workmen or mechanics in the employ of the Contractor, Subcontractor or other person doing or contracting to do all or part of the work contemplated by the Contract shall be permitted or required to work more than eight hours in any one calendar day or more than five calendar days in any one week except in cases of extraordinary emergency including fire, flood or danger to life or property. "Extraordinary emergency" shall be deemed to include situations in which sufficient laborers, workers and mechanics cannot be employed to carry on public work expeditiously as a result of such restrictions upon the number of hours and days of labor and the immediate commencement or prosecution or completion without undue delay of the public work is necessary in the judgment of the NYS Commissioner of Labor for the preservation of the Contract Site or for the protection of the life and limb of the persons using the Contract Site.

d. ARTICLE 9 BUILDING SERVICES CONTRACTS In compliance with Article 9, Section 230 of the New York State Labor Law:

i. Payroll Records Contractors and Subcontractors must keep original payrolls or transcripts subscribed and affirmed as true under the penalties of perjury as required by law. Where the Contractor or Subcontractor maintains no regular place of business in New York State, such records must be kept at the work Site while work is being performed.

ii. Overtime Employees of Contractors and Subcontractors who work in excess of eight hours in a day or forty hours in a week shall be paid at the overtime rate identified by the New York State Department of Labor.

9. TAXES

a. Unless otherwise specified in the Solicitation, Bid Specifications or Contract, the quoted Bid price includes all taxes applicable to the transaction.

b. Purchases made by the State of New York and certain non-State Authorized Users are exempt from New York State and local sales taxes and, with certain exceptions, federal excise taxes. To satisfy the requirements of the New York State Sales tax exemption, either the Purchase Order issued by a State Agency or the invoice forwarded to authorize payment for such purchases will be sufficient evidence that the sale by the Contractor was made to the State, an exempt organization under Section 1116 (a) (1) of the Tax Law. Non-State Authorized Users must offer their own proof of exemption upon request. No person, firm or corporation is, however, exempt from paying the State Truck Mileage and Unemployment Insurance or Federal Social Security taxes, which remain the sole responsibility of the Bidder/Contractor.

c. Purchases by Authorized Users other than the State of New York may be subject to certain taxes which were not included in the Bid price, and in those instances the tax should be computed based on the Contract price and added to the invoice submitted to such entity for payment.

10. EXPENSES PRIOR TO CONTRACT EXECUTION The Commissioner and any Authorized User(s) are not liable for any costs incurred by a Bidder or Contractor in the preparation and production of a Bid, Mini-Bid, cost proposal revision, or for any work performed prior to Contract execution.

11. ADVERTISING RESULTS The prior written approval of the Commissioner is required in order for results of the Solicitation to be used by the Contractor as part of any commercial advertising. The Contractor shall also obtain the prior written approval of the Commissioner relative to the Solicitation or Contract for press or other media releases.

12. PRODUCT REFERENCES

a. "Or Equal" In all Solicitations or Bid Specifications, the words "or equal" are understood to apply where a copyrighted, brand name, trade name, catalog reference, or patented Product is referenced. References to such specific Product are intended as descriptive, not restrictive, unless otherwise stated. Comparable Product will be considered if proof of compatibility is provided, including appropriate catalog excerpts, descriptive literature, specifications and test data, etc. The Commissioner's decision as to acceptance of the Product as equal shall be final.

b. Discrepancies in References In the event of a discrepancy between the model number referenced in the Solicitation or Bid Specifications and the written description of the Products that cannot be reconciled, then the written description shall prevail.

13. REMANUFACTURED, RECYCLED, RECYCLABLE OR RECOVERED MATERIALS Upon the conditions specified in the Solicitation and in accordance with the laws of the State of New York, Contractors are encouraged to use recycled, recyclable or recovered materials in the manufacture of Products and packaging to the maximum extent practicable without jeopardizing the performance or intended end use of the Product or packaging unless such use is precluded due to health, welfare, safety requirements or in the Solicitation. Contractors are further encouraged to offer remanufactured Products to the maximum extent practicable without jeopardizing the performance or intended end use of the Product unless such use is precluded due to health, welfare, safety requirements or by

the Solicitation. Where such use is not practical, suitable, or permitted by the Solicitation, Contractor shall deliver new materials in accordance with the "Warranties" set forth below.

Items with recycled, recyclable, recovered, refurbished or remanufactured content must be identified in the Bid or Bidder will be deemed to be offering new Product.

14. PRODUCTS MANUFACTURED IN PUBLIC

INSTITUTIONS Bids offering Products that are manufactured or produced in public institutions will be rejected.

15. PRICING

a. Unit Pricing If required by the Solicitation, the Bidder should insert the price per unit specified and the price extensions in decimals, not to exceed four places for each item unless otherwise specified, in the Solicitation. In the event of a discrepancy between the unit price and the extension, the unit price shall govern unless, in the sole judgment of the Commissioner, such unit pricing is obviously erroneous.

b. Net Pricing Unless otherwise required by the Solicitation, prices shall be net, including transportation, customs, tariff, delivery and other charges fully prepaid by the Contractor to the destination(s) indicated in the Solicitation.

c. "No Charge" Bid When Bids are requested on a number of Products as a Group or lot, a Bidder desiring to Bid "no charge" on a Product in the Group or lot must clearly indicate such. Otherwise, such Bid may be considered incomplete and be rejected, in whole or in part, at the discretion of the Commissioner.

d. Educational Pricing All Products to be supplied for educational purposes that are subject to educational discounts shall be identified in the Bid and such discounts shall be made available to qualifying institutions.

e. Third Party Financing If Product acquisitions are financed through any third party financing, Contractor may be required as a condition of Contract award to agree to the terms and conditions of a "Consent & Acknowledgment Agreement" in a form acceptable to the Commissioner.

f. Best Pricing Offer During the Contract term, if substantially the same or a smaller quantity of a Product is sold by the Contractor outside of this Contract upon the same or similar terms and conditions as that of this Contract at a lower price to a federal, state or local governmental entity, the price under this Contract, at the discretion of the Commissioner, shall be immediately reduced to the lower price.

g. Specific price decreases:

(i) GSA Changes: Where net pricing under the Contract is based on an approved GSA schedule, price decreases shall take effect automatically during the Contract term and apply to Purchase Orders submitted on or after the date the approved GSA schedule pricing decreases during the Contract term; or

(ii) Commercial Price List Reductions: Where net pricing under the Contract is based on a discount from Contractor's list prices, price decreases shall take effect automatically during the Contract term and apply to Purchase Orders submitted on or after the date Contractor lowers its pricing to its customers generally or to similarly situated government customers during the Contract term; or

(iii) Special Offers/Promotions Generally: Where Contractor generally offers more advantageous special price promotions or special discount pricing to other customers during the Contract term for a similar quantity, and the maximum price or discount associated with such offer or promotion is better than the discount or net pricing otherwise available under this Contract, such better price or discount shall apply for similar quantity transactions under this Contract for the life of such general offer or promotion; and

(iv) Special Offers/Promotions to Authorized Users:

Contractor may offer Authorized Users, under either this Contract or any other contracting vehicle, competitive pricing which is lower than the net pricing set forth herein at any time during the Contract term and such lower pricing shall not be applied as a global price reduction under the Contract pursuant to the foregoing paragraph (iii).

Unless otherwise specified in the Solicitation, Contractor may offer lower prices or better terms (see Modification of Contract Terms) on any specific Purchase Order(s) from any Authorized User without being in conflict with, or having any obligation to comply on a global basis with, the terms of this clause.

h. Cost Proposal Revisions A Contractor may be solicited prior to Contract award to propose the best possible offer for the Product being bid on, in accordance with State Finance Law § 163(9)(c). A cost proposal revision must be a lower price than the initial price.

16. DRAWINGS

a. Drawings Submitted With Bid When the Solicitation requires the Bidder to furnish drawings and/or plans, such drawings and/or plans shall conform to the mandates of the Solicitation and shall, when approved by the Commissioner, be considered a part of the Bid and of any resulting Contract. All symbols and other representations appearing on the drawings shall be considered a part of the drawing.

b. Drawings Submitted During the Contract Term Where required to develop, maintain and deliver diagrams or other technical schematics regarding the scope of work, Contractor shall do so on an ongoing basis at no additional charge, and must, as a condition of payment, update drawings and plans during the Contract term to reflect additions, alterations, and deletions. Such drawings and diagrams shall be delivered to the Authorized User's representative.

c. Accuracy of Drawings Submitted All drawings shall be neat and professional in manner and shall be clearly labeled as to locations and type of Product, connections and components. Drawings and diagrams are to be in compliance with accepted drafting standards. Acceptance or approval of such plans shall not relieve the Contractor from responsibility for design or other errors of any sort in the drawings or plans, or from its responsibility for performing as required, furnishing Product, or carrying out any other requirements of the intended scope of work.

17. SITE INSPECTION Where a Site inspection is required, Bidder shall be required to inspect the Site, including environmental or other conditions, for pre-existing deficiencies that may affect the installed Product or that may affect Bidder's ability to properly deliver, install or otherwise provide the required Product. All inquiries regarding such conditions shall be made in writing. Bidder shall be deemed to have knowledge of any deficiencies or conditions that such inspection or inquiry might have disclosed. Bidder must provide a detailed explanation with its Bid if additional work is required under this clause in order to properly provide the required Product.

18. PURCHASING CARD The State's Purchasing Card program is designed to be an efficient and cost effective way to expedite purchases. The Purchasing Card (also referred to as the Procurement Card) is a credit card that enables Authorized Users to make authorized purchases directly from a Contractor without processing formal Purchase Orders. Purchasing Cards are issued to selected employees who are authorized to make purchases for the Authorized User. Cardholders can make purchases directly from any Contractor that accepts the Purchasing Card.

19. SAMPLES

a. Bidder Supplied Samples The Commissioner reserves the right to request from the Bidder/Contractor a representative sample(s) of the Product offered at any time prior to or after award of a Contract. Unless otherwise instructed, samples shall be furnished within the time specified in the request. Untimely submission of a sample may constitute grounds for rejection of the Bid or cancellation of the Contract. Samples must be submitted free of charge and be accompanied by the Bidder's name and address, any descriptive literature relating to the Product and a statement indicating how and where the sample is to be returned. Where applicable, samples must be properly labeled with the appropriate Solicitation or Contract reference.

A sample may be held by the Commissioner during the entire term of the Contract and for a reasonable period thereafter for comparison with deliveries. At the conclusion of the holding period, the sample, where feasible, will be returned as instructed by the Bidder, at the Bidder's expense and risk. Where the Bidder has failed to fully instruct the Commissioner as to the return of the sample (i.e., mode and place of return, etc.) or refuses to bear the cost of its return, the sample shall become the sole property of the receiving entity at the conclusion of the holding period.

b. Enhanced Samples When an approved sample exceeds the minimum specifications, all Product delivered must be of the same enhanced quality and identity as the sample. Thereafter, in the event of a Contractor's default, the Commissioner may procure a Product substantially equal to the enhanced sample from other sources, charging the Contractor for any additional costs incurred.

c. Conformance with Samples Submission of a sample (whether or not such sample is tested by, or for, the Commissioner) and approval thereof shall not relieve the Contractor from full compliance with all terms and conditions, performance related and otherwise, specified in the Solicitation. If in the judgment of the Commissioner the sample or Product submitted is not in accordance with the specifications or testing requirements prescribed in the Solicitation, the Commissioner may reject the Bid. If an award has been made, the Commissioner may cancel the Contract at the expense of the Contractor.

d. Testing All samples are subject to tests in the manner and place designated by the Commissioner, either prior to or after Contract award. Unless otherwise stated in the Solicitation, Bidder samples consumed or rendered useless by testing will not be returned to the Bidder. Testing costs for samples that fail to meet Contract requirements may be at the expense of the Contractor.

e. Requests For Samples By Authorized Users Requests for samples by Authorized Users require the consent of the Contractor. Where Contractor refuses to furnish a sample, Authorized User may, in its sole discretion, make a determination on the performance capability of the Product or on the issue in question.

BID EVALUATION

20. BID EVALUATION The Commissioner reserves the right to accept or reject any and all Bids, or separable portions of Bids, and waive technicalities, irregularities, and omissions if the Commissioner determines the best interests of the State will be served. The Commissioner, in his/her sole discretion, may accept or reject illegible, incomplete or vague Bids and his/her decision shall be final. A conditional or revocable Bid which clearly communicates the terms or limitations of acceptance may be considered, and Contract award may be made in compliance with the Bidder's conditional or revocable terms in the Bid.

21. TIE BIDS In the event two Bids are found to be substantially equivalent, price shall be the basis for determining the award recipient. While prompt payment discounts will not be considered in determining the low Bid, the Commissioner may consider any prompt payment discount in resolving Bids which are otherwise tied. If two or more Bidders submit substantially equivalent Bids as to pricing or other factors, the decision of the Commissioner to award a Contract to one or more of such Bidders shall be final.

22. QUANTITY CHANGES PRIOR TO AWARD The Commissioner reserves the right, at any time prior to the award of a specific quantity Contract, to alter in good faith the quantities listed in the Solicitation. In the event such right is exercised, the lowest responsible Bidder meeting the Solicitation requirements will be advised of the revised quantities and afforded an opportunity to extend or reduce its Bid price in relation to the changed quantities. Refusal by the low Bidder to so extend or reduce its Bid price may result in the rejection of its Bid and the award of such Contract to the lowest responsible Bidder who accepts the revised qualifications.

23. TIMEFRAME FOR OFFERS The Commissioner reserves the right to make awards within sixty days after the date of the Bid opening or such other period of time as set forth in the Solicitation, during which period, Bids must remain firm and cannot be withdrawn. Where an award is not made within the sixty day period or other time specified as set forth in the Solicitation, the Bids shall remain firm until such later time as either a Contract is awarded or the Bidder delivers to the Commissioner written notice of the withdrawal of its Bid.

TERMS & CONDITIONS

24. CONTRACT CREATION / EXECUTION Except for contracts governed by Article 11-B of the State Finance Law, subject to and upon receipt of all required approvals as set forth in the Solicitation, a Contract shall be deemed executed and created with the successful Bidder(s) upon the Commissioner's mailing or electronic communication to the address on the Bid/Contract of: (i) the final Contract Award Notice; (ii) a fully executed Contract; or (iii) a Purchase Order authorized by the Commissioner.

25. OFFICIAL USE ONLY/NO PERSONAL USE The Contract is only for official use by Authorized Users. Use of the Contract for personal or private purposes is strictly prohibited.

26. PARTICIPATION IN CENTRALIZED CONTRACTS

a. State Agencies All State Agencies may utilize and purchase under any Centralized Contract let by the Commissioner, unless the Solicitation limits purchases to specific State Agencies.

b. Non-State Agency Authorized Users Authorized Users other than State Agencies are permitted to make purchases through

Centralized Contracts where permitted by law, the Contract or the Commissioner.

c. Voluntary Extension Purchase Orders issued against a Centralized Contract by any Authorized User not provided for in the Contract shall be honored by the Contractor at its discretion and only with the approval of the OGS Commissioner and any other approvals required by law.

d. Responsibility for Performance Participation in Centralized Contracts by Authorized Users is permitted upon the following conditions: (i) the responsibility with regard to performance of any contractual obligation, covenant, condition or term thereunder by any Authorized User other than State Agencies shall be borne and is expressly assumed by such Authorized User and not by the State; (ii) a breach of the Contract by any particular Authorized User shall neither constitute nor be deemed a breach of the Contract as a whole which shall remain in full force and effect, and shall not affect the validity of the Contract nor the obligations of the Contractor thereunder respecting non-breaching Authorized Users, whether State or otherwise; (iii) for a breach by an Authorized User other than a State Agency, the State specifically and expressly disclaims any and all liability for such breach; and (iv) each non-State Agency Authorized User and Contractor guarantees to save the State, its officers, agents and employees harmless from any liability that may be or is imposed by the non-State Agency Authorized User's or Contractor's failure to perform in accordance with its obligations under the Contract.

e. Contract Migration Authorized Users holding individual Contracts with a Contractor at the time that Contractor is awarded a Centralized Contract for the same Products shall be permitted to migrate to that Centralized Contract effective with its commencement date. Such migration shall not operate to diminish, alter or eliminate any right that the Authorized User otherwise had under the terms and conditions of their individual Contract.

27. MODIFICATION OF CONTRACT TERMS The terms and conditions set forth in the Contract shall govern all transactions by Authorized User(s) under this Contract. The Contract may only be modified or amended upon mutual written agreement of the Commissioner and Contractor.

The Contractor may, however, offer Authorized User(s) more advantageous pricing, payment, or other terms and conditions than those set forth in the Contract. In such event, a copy of such terms shall be furnished to the Authorized User(s) and Commissioner by the Contractor at the time of such offer.

Other than where such terms are more advantageous for the Authorized User(s) than those set forth in the Contract, no alteration or modification of the terms of the Contract, including substitution of Product, shall be valid or binding against Authorized User(s) unless authorized by the Commissioner or specified in the Contract Award Notification. No such alteration or modification shall be made by unilaterally affixing such terms to Product upon delivery (including, but not limited to, attachment or inclusion of standard pre-printed order forms, product literature, "shrink wrap" terms accompanying software upon delivery, or other documents) or by incorporating such terms onto order forms, Purchase Orders or other documents forwarded by the Contractor for payment, notwithstanding Authorized User's subsequent acceptance of Product, or that Authorized User has subsequently processed such document for approval or payment.

28. SCOPE CHANGES The Commissioner reserves the right to require, by written order, changes to the scope of the Contract, provided that such changes do not materially alter the general scope of MAY 2015

the Contract. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under the Contract, whether or not changed by the order, the Commissioner shall, upon notice from Contractor as hereafter stated, make an equitable adjustment in the Contract price, the delivery schedule or both and shall modify the Contract. The Contractor must assert its right to an adjustment under this clause within thirty days from the date of receipt of the written order. However, if the Commissioner decides that the facts justify it, the Commissioner may provide an adjustment without receipt of a notice from Contractor. In the event of a dispute between the Contractor and the Commissioner, such dispute shall be resolved in accordance with the OGS Dispute Resolution Procedures; provided, however, that nothing in this clause shall excuse the Contractor from proceeding with the Contract as changed.

29. ESTIMATED/SPECIFIC QUANTITY CONTRACTS

Estimated quantity contracts, also referred to as indefinite delivery/indefinite quantity contracts, are expressly agreed and understood to be made for only the quantities, if any, actually ordered during the Contract term. No guarantee of any quantity is implied or given.

With respect to any specific quantity stated in the Contract, the Commissioner reserves the right after award to order up to 20% more or less (rounded to the next highest whole number) than the specific quantities called for in the Contract. Notwithstanding the foregoing, the Commissioner may purchase greater or lesser percentages of Contract quantities should the Commissioner and Contractor so agree. Such agreement may include an equitable price adjustment.

30. EMERGENCY CONTRACTS In the event that a disaster emergency is declared by Executive Order under Section 28 of Article 2-B of the Executive Law, or the Commissioner determines pursuant to his/her authority under Section 163(10)(b) of the State Finance Law that an emergency exists requiring the prompt and immediate delivery of Product, the Commissioner reserves the right to obtain such Product from any source, including but not limited to this Contract(s), as the Commissioner in his/her sole discretion determines will meet the needs of such emergency. Contractor shall not be entitled to any claim for lost profits for Product procured from other sources pursuant to this clause. The reasons underlying the finding that an emergency exists shall be included in the procurement record.

31. PURCHASE ORDERS Unless otherwise authorized in writing by the Commissioner, no Product is to be delivered or furnished by Contractor until transmittal of an official Purchase Order from the Authorized User. Unless terminated or cancelled pursuant to the authority vested in the Commissioner, Purchase Orders shall be effective and binding upon the Contractor when placed in the mail or electronically transmitted prior to the termination of the Contract period, addressed to the Contractor at the address for receipt of orders set forth in the Contract or in the Contract Award Notification.

All Purchase Orders issued pursuant to a Contract let by the Commissioner must bear the appropriate Contract number and, if necessary, required State approvals. As deemed necessary, the Authorized User may confirm pricing and other Product information with the Contractor prior to placement of the Purchase Order. The State reserves the right to require any other information from the Contractor which the State deems necessary in order to complete any Purchase Order placed under the Contract. Unless otherwise specified, all Purchase Orders against Centralized Contracts will be placed by Authorized Users directly with the Contractor and any discrepancy between the terms stated on the Contractor's order form, confirmation or acknowledgment, and the Contract terms shall be resolved in favor

of the terms most favorable to the Authorized User. Should an Authorized User add written terms and conditions to the Purchase Order that conflict with the terms and conditions of the Contract, the Contractor has the option of rejecting the Purchase Order within five business days of its receipt but shall first attempt to negotiate the additional written terms and conditions in good faith with the Authorized User, or fulfill the Purchase Order. Notwithstanding the above, the Authorized User reserves the right to dispute any discrepancies arising from the presentation of additional terms and conditions with the Contractor.

If, with respect to an Agency Specific Contract let by the Commissioner, a Purchase Order is not received by the Contractor within two weeks after the issuance of a Contract Award Notification, it is the responsibility of the Contractor to request in writing that the appropriate Authorized User forward a Purchase Order. If, thereafter, a Purchase Order is not received within a reasonable period of time, the Contractor shall promptly notify in writing the appropriate purchasing officer in OGS. Failure to timely notify such officer may, in the discretion of the OGS Commissioner and without cost to the State, result in the cancellation of such requirement by the OGS Commissioner with a corresponding reduction in the Contract quantity and price.

32. PRODUCT DELIVERY Delivery must be made as ordered to the address specified on the Purchase Order and in accordance with the terms of the Contract. Delivery shall be made within thirty calendar days after receipt of a Purchase Order by the Contractor, unless otherwise agreed to by the Authorized User and the Contractor. The decision of the Commissioner as to compliance with delivery terms shall be final. The burden of proof for delay in receipt of a Purchase Order shall rest with the Contractor. In all instances of a potential or actual delay in delivery, the Contractor shall immediately notify the Commissioner and the Authorized User, and confirm in writing the explanation of the delay, and take appropriate action to avoid any subsequent late deliveries. Any extension of time for delivery must be requested in writing by the Contractor and approved in writing by the Authorized User. Failure to meet such delivery time schedule may be grounds for cancellation of the order or, in the Commissioner's discretion, the Contract.

33. WEEKEND AND HOLIDAY DELIVERIES Unless otherwise specified in the Contract or by an Authorized User, deliveries will be scheduled for ordinary business hours, Monday through Friday (excluding legal holidays observed by the State of New York). Deliveries may be scheduled by mutual agreement for Saturdays, Sundays or legal holidays observed by the State of New York where the Product is for daily consumption, an emergency exists, the delivery is a replacement, delivery is late, or other reasonable circumstance in which event the convenience of the Authorized User shall govern.

34. SHIPPING/RECEIPT OF PRODUCT

a. Packaging Product shall be securely and properly packed for shipment, storage and stocking in appropriate, clearly labeled shipping containers and according to accepted commercial practice, without any extra charges for packing materials, cases or other types of containers. The container shall become and remain the property of the Authorized User unless otherwise specified in the Contract documents.

b. Shipping Charges Unless otherwise stated in the Contract, all deliveries shall be deemed to be freight on board (F.O.B.) destination tailgate delivery at the dock of the Authorized User. Unless otherwise agreed, items purchased at a price F.O.B. shipping point plus transportation charges shall not relieve the Contractor from responsibility for safe and proper delivery notwithstanding the Authorized User's payment of transportation charges. Contractor shall MAY 2015

be responsible for ensuring that the bill of lading states "charges prepaid" for all shipments.

c. Receipt of Product The Contractor shall be solely responsible for assuring that deliveries are made to personnel authorized to accept delivery on behalf of the Authorized User. Any losses resulting from the Contractor's failure to deliver Product to authorized personnel shall be borne exclusively by the Contractor.

35. TITLE AND RISK OF LOSS Notwithstanding the form of shipment, title or other property interest, risk of loss shall not pass from the Contractor to the Authorized User until the Products have been received, inspected and accepted by the receiving entity. Acceptance shall occur within a reasonable time or in accordance with such other defined acceptance period as may be specified in the Contract or Purchase Order. Mere acknowledgment by Authorized User personnel of the delivery or receipt of goods (e.g., signed bill of lading) shall not be deemed or construed as acceptance of the Products received. Any delivery of Product that is substandard or does not comply with the Contract may be rejected or accepted on an adjusted price basis, as determined by the Commissioner.

36. RE-WEIGHING PRODUCT Deliveries are subject to re-weighing at the point of destination by the Authorized User. If shrinkage occurs which exceeds that normally allowable in the trade, the Authorized User shall have the option to require delivery of the difference in quantity or to reduce the payment accordingly. Such option shall be exercised in writing by the Authorized User.

37. PRODUCT SUBSTITUTION In the event a specified Product listed in the Contract becomes unavailable or cannot be supplied by the Contractor for any reason (except as provided for in the Savings/Force Majeure clause), a Product deemed in writing by the Commissioner to be equal to or better than the specified Product must be substituted by the Contractor at no additional cost or expense to the Authorized User. Unless otherwise specified, any substitution of Product prior to the Commissioner's written approval may be cause for termination of Contract.

38. REJECTED PRODUCT When Product is rejected, it must be removed by the Contractor from the premises of the Authorized User within ten calendar days of notification of rejection by the Authorized User. Upon notification of rejection, risk of loss of rejected or non-conforming Product shall remain with Contractor. Rejected items not removed by the Contractor within ten calendar days of notification shall be regarded as abandoned by the Contractor, and the Authorized User shall have the right to dispose of Product as its own property. The Contractor shall promptly reimburse the Authorized User for any and all costs and expenses incurred in storage or effecting removal or disposition after the ten-calendar-day period.

39. INSTALLATION Where installation is required, Contractor shall be responsible for placing and installing the Product in the required locations. All materials used in the installation shall be of good quality and shall be free from any and all defects that would mar the Product or render it unsound. Installation includes the furnishing of any equipment, rigging and materials required to install or place the Product in the proper location. The Contractor shall protect the Site from damage for all its work and shall repair damages or injury of any kind caused by the Contractor, its employees, officers or agents. If any alteration, dismantling or excavation, etc. is required to effect installation, the Contractor shall thereafter promptly restore the structure or Site. Work shall be performed to cause the least inconvenience to the Authorized User(s) and with proper consideration for the rights of other Contractors or workers. The Contractor shall promptly perform its work and shall coordinate its activities with those

of other Contractors. The Contractor shall clean up and remove all debris and rubbish from its work as required or directed. Upon completion of the work, the building and surrounding area of work shall be left clean and in a neat, unobstructed condition, and everything in satisfactory repair and order.

40. REPAIRED OR REPLACED PRODUCTS, PARTS, OR COMPONENTS Where the Contractor is required to repair, replace or substitute Product or parts or components of the Product under the Contract, the repaired, replaced or substituted Products shall be subject to all terms and conditions for new parts and components set forth in the Contract including warranties, as set forth in the Warranties clause herein. Replaced or repaired Product or parts and components of such Product shall be new and shall, if available, be replaced by the original manufacturer's component or part. Remanufactured parts or components meeting new Product standards may be permitted by the Commissioner or Authorized User. Before installation, all proposed substitutes for the original manufacturers' installed parts or components must be approved by the Authorized User. The part or component shall be equal to or of better quality than the original part or component being replaced.

41. EMPLOYEES, SUBCONTRACTORS AND AGENTS All employees, Subcontractors or agents performing work under the Contract must be trained staff or technicians who meet or exceed the professional, technical and training qualifications set forth in the Contract, and must comply with all security and administrative requirements of the Authorized User. The Commissioner reserves the right to conduct a security background check or otherwise approve any employee, Subcontractor or agent furnished by Contractor and to refuse access to or require replacement of any personnel for cause based on professional, technical or training qualifications, quality of work or change in security status or non-compliance with Authorized User's security or other requirements. Such approval shall not relieve the Contractor of the obligation to perform all work in compliance with the Contract terms. The Commissioner reserves the right to reject and/or bar from any facility for cause any employee, Subcontractor, or agent of the Contractor.

42. ASSIGNMENT In accordance with Section 138 of the State Finance Law, the Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of the Contract or its right, title or interest therein, or its power to execute such Contract to any other person, company, firm or corporation in performance of the Contract without the prior written consent of the Commissioner or Authorized User (as applicable); provided, however, any consent shall not be unreasonably withheld, conditioned, delayed or denied. Notwithstanding the foregoing, the State shall not hinder, prevent or affect assignment of money by a Contractor for the benefit of its creditors. Prior to a consent to assignment of monies becoming effective, the Contractor shall file a written notice of such monies assignments with the State Comptroller. Prior to a consent to assignment of a Contract, or portion thereof, becoming effective, the Contractor shall submit the request for assignment to the Commissioner and seek written agreement from the Commissioner which will be filed with the State Comptroller. Commissioner shall use reasonable efforts to promptly respond to any request by Contractor for an assignment, provided that Contractor supplies sufficient information about the party to whom the Contractor proposes to assign the Contract.

Upon notice to the Contractor, the Contract may be assigned without the consent of the Contractor to another State Agency or subdivision of the State pursuant to a governmental reorganization or assignment of functions under which the functions are transferred to a successor Agency or to another Agency that assumes OGS responsibilities for the Contract.

43. SUBCONTRACTORS AND SUPPLIERS The Commissioner reserves the right to reject any proposed Subcontractor or supplier for bona fide business reasons, including, but not limited to: the company failed to solicit New York State certified minority- and women-owned business enterprises as required in prior OGS Contracts; the fact that such Subcontractor or supplier is on the New York State Department of Labor's list of companies with which New York State cannot do business; the Commissioner's determination that the company is not qualified or is not responsible; or the fact that the company has previously provided unsatisfactory work or services.

44. PERFORMANCE/BID BOND The Commissioner reserves the right to require a Bidder or Contractor to furnish, without additional cost, a performance, payment or Bid bond, negotiable irrevocable letter of credit, or other form of security for the faithful performance of the Contract. Where required, such bond or other security shall be in the form prescribed by the Commissioner.

45. SUSPENSION OF WORK The Commissioner, in his/her sole discretion, reserves the right to suspend any or all activities under the Contract, at any time, in the best interests of the Authorized User. In the event of such suspension, the Contractor will be given a formal written notice outlining the particulars of such suspension. Examples of the reason for such suspension include, but are not limited to, a budget freeze or reduction in State spending, declaration of emergency, contract compliance issues or other circumstances. Upon issuance of such notice, the Contractor is not to accept any Purchase Orders, and shall comply with the suspension order. Activity may resume at such time as the Commissioner issues a formal written notice authorizing a resumption of performance under the Contract.

An Authorized User may issue a formal written notice for the suspension of work for which it has engaged the Contractor for reasons specified in the above paragraph. The written notice shall set forth the reason for such suspension and a copy of the written notice shall be provided to the Commissioner.

46. TERMINATION

a. For Cause For a material breach that remains uncured for more than thirty (30) calendar days or other longer period as specified by written notice to the Contractor, the Contract or Purchase Order may be terminated by the Commissioner or Authorized User respectively, at the Contractor's expense. Such termination shall be upon written notice to the Contractor. In such event, the Commissioner or Authorized User may complete the contractual requirements in any manner it may deem advisable and pursue available legal or equitable remedies for breach.

b. For Convenience This Contract may be terminated at any time by the Commissioner for convenience upon sixty (60) calendar days or other longer period as specified by written notice, without penalty or other early termination charges due. Such termination of the Contract shall not affect any project or Purchase Order that has been issued under the Contract prior to the date of such termination. If the Contract is terminated pursuant to this subdivision, the Authorized User shall remain liable for all accrued but unpaid charges incurred through the date of the termination. Contractor shall use due diligence and fulfill any outstanding Purchase Orders.

c. For Violation of Sections 139-j and 139-k of the State Finance Law The Commissioner reserves the right to terminate the Contract in the event it is found that the certification filed by the Bidder in accordance with Section 139-k of the State Finance Law was intentionally false or intentionally incomplete. Upon such finding, the Commissioner may exercise his or her termination right by providing

written notification to the Contractor in accordance with the written notification terms of the Contract.

d. For Violation of Section 5-a of the New York State Tax Law

The Commissioner reserves the right to terminate the Contract in the event it is found that the certification filed by the Contractor in accordance with Section 5-a of the Tax Law is not timely filed during the term of the Contract or the certification furnished was intentionally false or intentionally incomplete. Upon such finding, the Commissioner may exercise his or her termination right by providing written notification to the Contractor in accordance with the written notification terms of the Contract.

e. For Non-Responsibility The Bidder agrees that if it is found by the State that the Bidder's responses to the Vendor Responsibility Questionnaire were intentionally false or intentionally incomplete, on such finding, the Commissioner may terminate the Contract.

Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate OGS officials or staff, the Contract may be terminated by the Commissioner at the Contractor's expense where the Contractor is determined by the Commissioner to be non-responsible. In such event, the Commissioner may complete the contractual requirements in any manner he or she may deem advisable and pursue available legal or equitable remedies for breach.

In no case shall such termination of the Contract by the State be deemed a breach thereof, nor shall the State be liable for any damages for lost profits or otherwise, which may be sustained by the Contractor as a result of such termination.

f. Upon Conviction of Certain Crimes The Commissioner reserves the right to terminate the Contract in the event it is found that a member, partner, director or officer of Contractor is convicted of one or more of the following: Bribery Involving Public Servants and Related Offenses as defined in Article 200 of the New York State Penal Law; Corrupting the Government as defined in Article 496 of the New York State Penal Law; or Defrauding the Government as defined in Section 195.20 of the New York State Penal Law.

47. SAVINGS/FORCE MAJEURE A force majeure occurrence is an event or effect that cannot be reasonably anticipated or controlled and is not due to the negligence or willful misconduct of the affected party. Force majeure includes, but is not limited to, acts of God, acts of war, acts of public enemies, terrorism, strikes, fires, explosions, actions of the elements, floods, or other similar causes beyond the control of the Contractor or the Commissioner in the performance of the Contract where non-performance, by exercise of reasonable diligence, cannot be prevented.

The affected party shall provide the other party with written notice of any force majeure occurrence as soon as the delay is known and provide the other party with a written contingency plan to address the force majeure occurrence, including, but not limited to, specificity on quantities of materials, tooling, people, and other resources that will need to be redirected to another facility and the process of redirecting them. Furthermore, the affected party shall use its commercially reasonable efforts to resume proper performance within an appropriate period of time. Notwithstanding the foregoing, if the force majeure condition continues beyond thirty (30) days, the parties to the Contract shall jointly decide on an appropriate course of action that will permit fulfillment of the parties' objectives under the Contract.

The Contractor agrees that in the event of a delay or failure of performance by the Contractor under the Contract due to a force majeure occurrence:

- a. The Commissioner may purchase from other sources (without recourse to and by the Contractor for the costs and expenses thereof) to replace all or part of the Products which are the subject of the delay, which purchases may be deducted from the Contract quantities without penalty or liability to the State, or
- b. The Contractor will provide Authorized Users with access to Products first in order to fulfill orders placed before the force majeure event occurred. The Commissioner agrees that Authorized Users shall accept allocated performance or deliveries during the occurrence of the force majeure event.

Neither the Contractor nor the Commissioner shall be liable to the other for any delay in or failure of performance under the Contract due to a force majeure occurrence. Any such delay in or failure of performance shall not constitute default or give rise to any liability for damages. The existence of such causes of such delay or failure shall extend the period for performance to such extent as determined by the Contractor and the Commissioner to be necessary to enable complete performance by the Contractor if reasonable diligence is exercised after the cause of delay or failure has been removed.

Notwithstanding the above, at the discretion of the Commissioner where the delay or failure will significantly impair the value of the Contract to the State or to Authorized Users, the Commissioner may terminate the Contract or the portion thereof which is subject to delays, and thereby discharge any unexecuted portion of the Contract or the relative part thereof.

In addition, the Commissioner reserves the right, in his or her sole discretion, to make an equitable adjustment in the Contract terms and/or pricing should extreme and unforeseen volatility in the marketplace affect pricing or the availability of supply. "Extreme and unforeseen volatility in the marketplace" is defined as market circumstances which meet the following criteria: (i) the volatility is due to causes outside the control of Contractor; (ii) the volatility affects the marketplace or industry, not just the particular Contract source of supply; (iii) the effect on pricing or availability of supply is substantial; and (iv) the volatility so affects Contractor's performance that continued performance of the Contract would result in a substantial loss. In the event of a dispute between the Contractor and the Commissioner, such dispute shall be resolved in accordance with the OGS Dispute Resolution Procedures; provided, however, that nothing in this clause shall excuse the Contractor from performing in accordance with the Contract as changed.

48. CONTRACT INVOICING

a. Invoicing Contractor and the dealers/distributors/resellers designated by the Contractor, if any, shall provide complete and accurate billing invoices to each Authorized User in order to receive payment. Billing invoices submitted to an Authorized User must contain all information required by the Contract and the State Comptroller or other appropriate fiscal officer. Submission of an invoice and payment thereof shall not preclude the Commissioner from requesting reimbursement or demanding a price adjustment in any case where the Product delivered is found to deviate from the terms and conditions of the Contract or where the billing was inaccurate.

Contractor shall provide, upon request of the Commissioner, any and all information necessary to verify the accuracy of the billings. Such information shall be provided in a commercially reasonable manner as requested by the Commissioner. The Commissioner may direct the

Contractor to provide the information to the State Comptroller or to any Authorized User of the Contract.

b. Payment of Contract Purchases made by an Authorized User when the State Comptroller is responsible for issuing such payment

The Authorized User and Contractor agree that payments for invoices submitted by the Contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the Commissioner, in the Commissioner's sole discretion, due to extenuating circumstances. Such electronic payments shall be made in accordance with ordinary State procedures and practices. The Contractor shall comply with the State Comptroller's procedures to authorize electronic payments. Authorization forms are available at the State Comptroller website at www.osc.state.ny.us, by e-mail at HelpDesk@sfs.ny.gov, or by telephone at (518) 457-7737 or toll free (877) 737-4185. Contractor acknowledges that it will not receive payment on any invoices submitted under this Contract that are payable by the State Comptroller if it does not comply with the State Comptroller's electronic payment procedures, except where the Commissioner has expressly authorized payment by paper check as set forth above.

c. Payment of Contract Purchases made by an Authorized User when the State Comptroller is not responsible for issuing such payment

The Authorized User and Contractor agree that payments for such Contract purchases shall be billed directly by Contractor on invoices/vouchers, together with complete and accurate supporting documentation as required by the Authorized User. Such payments shall be as mandated by the appropriate governing law from the receipt of a proper invoice. Such Authorized User and Contractor are strongly encouraged to establish electronic payments.

49. DEFAULT – AUTHORIZED USER

a. Breach by Authorized User An Authorized User's breach shall not be deemed a breach of the Centralized Contract; rather, it shall be deemed a breach of the Authorized User's performance under the terms and conditions of the Centralized Contract.

b. Failure to Make Payment In the event a participating Authorized User fails to make payment to the Contractor for Products delivered, accepted and properly invoiced, within thirty calendar days of such delivery and acceptance, the Contractor may, upon five business days advance written notice to both the Commissioner and the Authorized User's purchasing official, suspend additional provision of Products to such entity until such time as reasonable arrangements have been made and assurances given by such entity for current and future Contract payments.

c. Notice of Breach Notwithstanding the foregoing, the Contractor shall, at least ten business days prior to declaring a breach of Contract by any Authorized User, by certified or registered mail, notify both the Commissioner and the purchasing official of the breaching Authorized User of the specific facts, circumstances and grounds upon which a breach will be declared.

d. Insufficient basis If the Contractor's basis for declaring a breach is insufficient, the Contractor's declaration of breach and failure to provide Products to an Authorized User may constitute a breach of the Contract, and the Authorized User may thereafter seek any remedy available at law or equity.

50. PROMPT PAYMENTS

a. State Agencies Upon acceptance of Product or as otherwise provided by Contract, Contractor may invoice for payment. The required payment date shall be thirty (30) calendar days, excluding

legal holidays, from the receipt of a proper invoice, as determined in accordance with State Finance Law Section 179-f(2) and 2 NYCRR Part 18. The payment of interest on certain payments due and owed by the State Agency may be made in accordance with State Finance Law Sections 179-d et seq. and the implementing regulations (2 NYCRR § 18.1 et seq.).

b. By Non-State Agencies Upon acceptance of Product or as otherwise provided by Contract, Contractor may invoice for payment. The required payment date shall be thirty (30) calendar days, excluding legal holidays, or as mandated by the appropriate governing law from the receipt of a proper invoice. The terms of Article 11-A of the State Finance Law apply only to procurements by and the consequent payment obligations of State Agencies. Neither expressly nor by any implication is the statute applicable to non-State agency Authorized Users. Neither OGS nor the State Comptroller is responsible for payments on any purchases made by a non-State agency Authorized User.

c. By Contractor Should the Contractor be liable for any payments to the State hereunder, interest, late payment charges and collection fee charges will be determined and assessed pursuant to Section 18 of the State Finance Law.

51. REMEDIES FOR BREACH It is understood and agreed that all rights and remedies afforded below shall be in addition to all remedies or actions otherwise authorized or permitted by law:

a. Cover/Substitute Performance In the event of Contractor's material, uncured breach, the Commissioner may, with or without issuing a formal Solicitation: (i) purchase from other sources; or (ii) if the Commissioner is unsuccessful after making reasonable attempts, under the circumstances then-existing, to timely obtain acceptable replacement Product of equal or comparable quality, the Commissioner may acquire acceptable replacement Product of lesser or greater quality.

Such purchases may be deducted from the Contract quantity without penalty or liability to the State. The Commissioner agrees that Authorized Users shall accept allocated performance or deliveries during a period where Contractor is making good faith efforts to cure a material breach.

b. Withhold Payment In any case where a reasonable question of material, uncured non-performance by Contractor arises, payment may be withheld in whole or in part at the discretion of the Commissioner. Should Contractor and the Commissioner fail to agree upon the question of "materiality" in an instance of non-performance, such failure to agree shall be a dispute to be resolved in accordance with the OGS Dispute Resolution Procedures.

c. Bankruptcy In the event that the Contractor files, or there is filed against Contractor, a petition under the U.S. Bankruptcy Code during the term of this Centralized Contract, Authorized Users may, at their discretion, make application to exercise their right to set-off against monies due the debtor or, under the doctrine of recoupment, be credited the amounts owed by the Contractor arising out of the same transactions.

d. Reimbursement of Costs Incurred The Contractor agrees to reimburse the Authorized User promptly for any and all additional costs and expenses incurred for acquiring acceptable replacement Product. Should the cost of cover be less than the Contract price, the Contractor shall have no claim to the difference. The Contractor covenants and agrees that in the event suit is successfully prosecuted

for any default on the part of the Contractor, all costs and expenses, including reasonable attorney's fees, shall be paid by the Contractor.

Where the Contractor fails to timely deliver pursuant to the guaranteed delivery terms of the Contract, the ordering Authorized User may obtain replacement Product temporarily and the cost of the replacement Product shall be deducted from the Contract quantity without penalty or liability to the State.

e. Deduction/Credit Sums due as a result of these remedies may be deducted or offset by the Authorized User from payments due, or to become due, the Contractor on the same or another transaction. If no deduction or only a partial deduction is made in such fashion the Contractor shall pay to the Authorized User the amount of such claim or portion of the claim still outstanding, on demand. The Commissioner reserves the right to determine the disposition of any rebates, settlements, restitution, damages, etc., that arise from the administration of the Contract.

52. ASSIGNMENT OF CLAIM Contractor hereby assigns to the State any and all claims for overcharges associated with this Contract that may arise under the antitrust laws of the United States, 15 USC Section 1, et seq. and the antitrust laws of the State of New York, General Business Law Section 340, et seq.

53. TOXIC SUBSTANCES Each Contractor furnishing a toxic substance, as defined by Section 875 of the Labor Law, shall provide such Authorized User with not less than two copies of a Material Safety Data Sheet, which sheet shall include for each such substance the information outlined in Section 876 of the Labor Law.

Before any chemical product is used or applied on or in any building, a copy of the product label and Material Safety Data Sheet must be provided to and approved by the Authorized User representative.

54. INDEPENDENT CONTRACTOR It is understood and agreed that the legal status of the Contractor, its Subcontractors, agents, officers and employees under this Contract is that of an independent contractor, and in no manner shall they be deemed employees of the Authorized User, and therefore are not entitled to any of the benefits associated with such employment.

55. SECURITY Contractor warrants, covenants and represents that it will comply fully with all security procedures of the Authorized User(s) in performance of the Contract including but not limited to physical, facility, documentary and cyber security rules, procedures and protocols.

56. COOPERATION WITH THIRD PARTIES The Contractor shall be responsible for fully cooperating with any third party, including but not limited to other Contractors or Subcontractors of the Authorized User, as necessary to ensure delivery or performance of Product.

57. CONTRACT TERM - RENEWAL In addition to any stated renewal periods in the Contract, any Contract or unit portion thereof let by the Commissioner may be extended by mutual agreement of the Commissioner and the Contractor for an additional period(s) of up to one year. Such extension may be exercised on a month-to-month basis or in other stated periods of time during the one year extension.

58. WARRANTIES

a. Product Performance Contractor hereby warrants and represents that the Products acquired by the Authorized User under this Contract conform to the manufacturer's specifications, performance standards and Documentation and that the
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Documentation fully describes the proper procedure for using the Products.

b. Title and Ownership Contractor warrants and represents that it has (i) full ownership, clear title free of all liens, or (ii) the right to transfer or deliver specified license rights to any Products acquired by Authorized User under this Contract. Contractor shall be solely liable for any costs of acquisition associated therewith. Contractor shall indemnify Authorized Users and hold Authorized Users harmless from any damages and liabilities (including reasonable attorneys' fees and costs) arising from any breach of Contractor's warranties as set forth herein.

c. Product Warranty Contractor further warrants and represents that Products, components or parts specified and furnished by or through Contractor, whether specified and furnished individually or as a system, shall be free from defects in material and workmanship and will conform to all requirements of the Contract for the manufacturer's standard commercial warranty period, if applicable, or for a minimum of one (1) year from the date of acceptance, whichever is longer (the "Product warranty period").

During the Product warranty period, defects in the materials or workmanship of Products, components, or parts specified and furnished by or through Contractor, whether specified and furnished individually or as a system, shall be repaired or replaced by Contractor at no cost or expense to the Authorized User. Contractor shall extend the Product warranty period for individual Products, or for the system as a whole, as applicable, by the cumulative periods of time, after notification, during which an individual Product, or the system as a whole, requires repairs or replacement resulting in down time or is in the possession of the Contractor, its agents, officers, Subcontractors, distributors, resellers or employees ("extended warranty").

Any component or part replaced by the Contractor under the Contract warranties shall be guaranteed for the greater of: (i) the Product warranty period set forth herein; or (ii) the manufacturer's standard commercial warranty period offered for the component or part, if applicable.

All costs for materials, labor, and transportation incurred to repair or replace Products, parts, components, or systems as a whole during the warranty period shall be borne solely by the Contractor, and the State or Authorized User shall in no event be liable or responsible therefor.

Where Contractor, the independent software vendor (ISV), or other third-party manufacturer markets any Product delivered by or through Contractor with a standard commercial warranty, such standard warranty shall be in addition to, and not relieve the Contractor from, Contractor's warranty obligations during the Product warranty and extended warranty periods. Where such standard commercial warranty covers all or some of the Product warranty or extended warranty periods, Contractor shall be responsible for the coordination during the Product warranty or extended warranty periods with ISV or other third-party manufacturers for warranty repair or replacement of ISV or other third-party manufacturer's Product.

Where Contractor, ISV or other third-party manufacturer markets any Product with a standard commercial warranty that goes beyond the Product warranty or extended warranty periods, Contractor shall notify the Authorized User and pass through the standard commercial warranty to Authorized User at no additional charge; provided, however, that Contractor shall not be responsible for coordinating services under the standard commercial warranty after expiration of the Product warranty and extended warranty periods.

Unless recycled, recyclable, or recovered materials are available in accordance with the Remanufactured, Recycled, Recyclable or Recovered Materials clause, Product offered shall be standard new equipment, current model or most recent release of regular stock product with all parts regularly used with the type of equipment offered. Contractor further warrants and represents that no component or part has been substituted or applied contrary to the manufacturer's recommendations and standard practice.

Contractor shall not be responsible for any modification of the Products made by an Authorized User without Contractor's approval.

d. Virus Warranty The Contractor represents and warrants that any Licensed Software acquired under the Contract by the Authorized User does not contain any known Viruses. Contractor is not responsible for Viruses introduced at Licensee's Site.

e. Date/Time Warranty Contractor warrants that Product furnished pursuant to this Contract shall, when used in accordance with the Product Documentation, be able to accurately process date/time data (including, but not limited to, calculating, comparing, and sequencing) transitions, including leap year calculations. Where a Contractor proposes or an acquisition requires that specific Products must perform as a package or system, this warranty shall apply to the Products as a system.

Where Contractor is providing ongoing services, including but not limited to: (i) consulting, integration, code or data conversion, (ii) maintenance or support services, (iii) data entry or processing, or (iv) contract administration services (e.g., billing, invoicing, claim processing), Contractor warrants that services shall be provided in an accurate and timely manner without interruption, failure or error due to the inaccuracy of Contractor's business operations in processing date/time data (including, but not limited to, calculating, comparing, and sequencing) various date/time transitions, including leap year calculations. Contractor shall be responsible for damages resulting from any delays, errors or untimely performance resulting therefrom, including but not limited to the failure or untimely performance of such services.

f. Workmanship Warranty Contractor warrants that the services acquired under this Contract will be provided in a professional and workmanlike manner in accordance with industry standards. The Authorized User must notify Contractor of any services warranty deficiencies within ninety calendar days from performance of the services that gave rise to the warranty claim.

g. Survival of Warranties All warranties contained in this Contract shall survive the termination of this Contract.

h. Prompt Notice of Breach The Authorized User shall promptly notify the Contractor and the Commissioner in writing of any claim of breach of any warranty provided herein.

i. Additional Warranties Where Contractor, Product manufacturer or service provider generally offers additional or more advantageous warranties than those set forth herein, Contractor shall offer or pass through any such warranties to Authorized Users.

j. No Limitation of Rights The rights and remedies of the State and the Authorized Users provided in this clause are in addition to and do not limit any rights afforded to the State and the Authorized Users by any other clause of the Contract.

59. LEGAL COMPLIANCE Contractor represents and warrants that it shall secure all notices and comply with all applicable laws,

ordinances, rules and regulations of any governmental entity in conjunction with the performance of obligations under the Contract. Prior to award and during the Contract term and any renewals thereof, Contractor must establish to the satisfaction of the Commissioner that it meets or exceeds all requirements of the Solicitation and Contract and any applicable laws, including but not limited to, permits, licensing, and shall provide such proof as required by the Commissioner. Failure to comply or failure to provide proof may constitute grounds for the Commissioner to terminate or suspend the Contract, in whole or in part, or to take any other action deemed necessary by the Commissioner. Contractor also agrees to disclose information and provide affirmations and certifications to comply with Sections 139-j and 139-k of the State Finance Law.

60. INDEMNIFICATION Contractor shall be fully liable for the actions of its agents, employees, partners or Subcontractors and shall fully defend, indemnify and hold harmless the Authorized Users from suits, actions, damages and costs of every name and description relating to personal injury and damage to real or personal tangible property caused by any intentional act or negligence of Contractor, its agents, employees, partners or Subcontractors, which shall arise from or result directly or indirectly from this Contract, without limitation; provided, however, that the Contractor shall not indemnify to the extent any claim, loss or damage arising hereunder solely due to the negligent act, failure to act, gross negligence or willful misconduct of the Authorized Users.

The Authorized User shall give Contractor: (i) prompt written notice of any action, claim or threat of suit, or other suit for which Contractor is required to fully indemnify an Authorized User, (ii) the opportunity to take over, settle or defend such action, claim or suit at Contractor's sole expense, and (iii) assistance in the defense of any such action, claim or suit at the expense of Contractor. Notwithstanding the foregoing, the State reserves the right to join such action, at its sole expense, if it determines there is an issue involving a significant public interest.

In the event that an action or proceeding at law or in equity is commenced against the Authorized User arising out of a claim for death, personal injury or damage to real or personal tangible property caused by any intentional or willful act, gross negligence, or negligence of Contractor, its agents, employees, partners or Subcontractors, which shall arise from or result directly or indirectly from the Products supplied under this Contract, and Contractor is of the opinion that the allegations in such action in whole or in part are not covered by the indemnification and defense provisions set forth in the Contract, Contractor shall immediately notify the Authorized User and the New York State Office of the Attorney General in writing and shall specify to what extent Contractor believes it is obligated to defend and indemnify under the terms and conditions of the Contract and to what extent it is not so obligated to defend and indemnify. Contractor shall in such event attempt to secure a continuance to permit the State and the Authorized User to appear and defend their interests in cooperation with Contractor, as is appropriate, including any jurisdictional defenses the State and Authorized User may have. In the event of a dispute regarding the defense, the Contractor and the Attorney General shall try to reach an amicable resolution, but the Attorney General shall have the final determination on such matters.

61. INDEMNIFICATION RELATING TO INFRINGEMENT The Contractor will also defend, indemnify and hold the Authorized Users harmless from and against any and all damages, expenses (including reasonable attorneys' fees), claims, judgments, liabilities and costs in any action for infringement of a patent, copyright, trademark, trade secret or other proprietary right provided: (a) such claim arises solely out of the Products as supplied by the Contractor,

and not out of any modification to the Products made by the Authorized User or by someone other than Contractor at the direction of the Authorized User without Contractor's approval, and (b) Authorized User gives Contractor prompt written notice of any such action, claim suit or threat of suit alleging infringement.

The Authorized User shall give Contractor the opportunity to take over, settle or defend such action, claim or suit at Contractor's sole expense, and to provide assistance in the defense of any such action, claim or suit at the expense of Contractor.

Such indemnity shall only be applicable in the event of claims, judgments, liabilities and/or costs that may be finally assessed against an Authorized User in any action for infringement of a patent, or of any copyright, trademark, trade secret or other third party proprietary right except to the extent such claims, judgments, liabilities and/or costs arise solely from the Authorized User's negligent act, failure to act, gross negligence or willful misconduct.

If usage of a Product shall be enjoined for any reason or if Contractor believes that it may be enjoined, Contractor shall have the right, at its own expense and sole discretion to take action in the following order of precedence: (i) to procure for the Authorized User the right to continue usage (ii) to modify the service or Product so that usage becomes non-infringing, and is of at least equal quality and performance; or (iii) to replace such Product or parts thereof, as applicable, with non-infringing Product of at least equal quality and performance. If the above remedies are not available, the parties shall terminate the Contract, in whole or in part as necessary and applicable, provided that the Authorized User is given a refund for any amounts paid for the period during which usage was not feasible.

In the event that an action at law or in equity is commenced against the Authorized User arising out of a claim that the Authorized User's use of the Product under the Contract infringes any patent, copyright, trademark, trade secret or proprietary right, and Contractor is of the opinion that the allegations in such action in whole or in part are not covered by the indemnification and defense provisions set forth in the Contract, Contractor shall immediately notify the Authorized User and the New York State Office of the Attorney General in writing and shall specify to what extent Contractor believes it is obligated to defend and indemnify under the terms and conditions of the Contract and to what extent it is not so obligated to defend and indemnify. Contractor shall in such event protect the interests of the Authorized User and seek to secure a continuance to permit the Authorized User to appear and defend their interests in cooperation with Contractor, as is appropriate, including any jurisdictional defenses the Authorized User may have. This constitutes the Authorized User's sole and exclusive remedy for patent infringement, or for infringement of any other third party proprietary right.

62. LIMITATION OF LIABILITY Except as otherwise set forth in the Indemnification clause and the Indemnification Relating to Infringement clause, the limit of liability shall be as follows:

a. Contractor's liability for any claim, loss or liability arising out of, or connected with the Products provided, and whether based upon default, or other liability such as breach of contract, warranty, negligence, misrepresentation or otherwise, shall in no case exceed direct damages in: (i) an amount equal to two (2) times the charges specified in the Purchase Order for the Products forming the basis of the Authorized User's claim or (ii) five hundred thousand dollars (\$500,000), whichever is greater.

b. The Authorized User may retain such monies from any amount due Contractor as may be necessary to satisfy any claim for damages, MAY 2015

costs and the like asserted against the Authorized User unless Contractor at the time of the presentation of claim shall demonstrate to the Authorized User's satisfaction that sufficient monies are set aside by the Contractor in the form of a bond or through insurance coverage to cover associated damages and other costs.

c. Notwithstanding the above, neither the Contractor nor the Authorized User shall be liable for any consequential, indirect or special damages of any kind which may result directly or indirectly from such performance, including, without limitation, damages resulting from loss of use or loss of profit by the Authorized User, the Contractor, or by others.

63. DISPUTE RESOLUTION PROCEDURES

It is the policy of OGS to provide interested parties, as defined in the OGS Dispute Resolution Procedures, with an opportunity to administratively resolve disputes, complaints or inquiries related to Solicitations, contract awards and contract administration. OGS encourages interested parties to seek resolution of disputes through consultation with OGS staff. All such matters shall be accorded impartial and timely consideration. Interested parties may also file formal written disputes. A copy of the OGS Dispute Resolution Procedures may be obtained by contacting the designated contact for the Solicitation, the Contract manager, or at: <http://nyspro.ogs.ny.gov/content/dispute-resolution-procedures>. OGS reserves the right to change the procedures set forth in the Dispute Resolution Procedures without seeking a Contract amendment.

THE FOLLOWING CLAUSES PERTAIN TO TECHNOLOGY & NEGOTIATED CONTRACTS

64. SOFTWARE LICENSE GRANT Where Product is acquired on a licensed basis the following shall constitute the license grant:

a. License Scope Licensee is granted a non-exclusive, perpetual license to use, execute, reproduce, display, perform, or merge the Product within its business enterprise in the United States up to the maximum licensed capacity stated on the Purchase Order. Product may be accessed, used, executed, reproduced, displayed or performed up to the capacity measured by the applicable licensing unit stated on the Purchase Order (i.e., payroll size, number of employees, CPU, MIPS, MSU, concurrent user, workstation). Licensee shall have the right to use and distribute modifications or customizations of the Product to and for use by any Authorized Users otherwise licensed to use the Product, provided that any modifications, however extensive, shall not diminish Licensor's proprietary title or interest. No license, right or interest in any trademark, trade name, or service mark is granted hereunder.

b. License Term The license term shall commence upon the License Effective Date, provided, however, that where an acceptance or trial period applies to the Product, the license term shall be extended by the time period for testing, acceptance or trial.

c. Licensed Documentation If commercially available, Licensee shall have the option to require the Contractor to deliver, at Contractor's expense: (i) one (1) hard copy and one (1) master electronic copy of the Documentation in a mutually agreeable format; (ii) hard copy instructions for access by downloading from the Internet; and (iii) hard copies of the Product Documentation by type of license in the following amounts, unless otherwise mutually agreed:

- Individual/Named User License - one (1) copy per License
- Concurrent Users - 10 copies per Site

- Processing Capacity - 10 copies per Site

Software media must be in a format specified by the Authorized User, without requiring any type of conversion.

Contractor hereby grants to Licensee a perpetual license right to make, reproduce (including downloading electronic copies of the Product) and distribute, either electronically or otherwise, copies of Product Documentation as necessary to enjoy full use of the Product in accordance with the Terms of License.

d. Product Technical Support & Maintenance Licensee shall have the option of electing the Product technical support and maintenance (“maintenance”) set forth in the Contract by giving written notice to Contractor any time during the Centralized Contract term. Maintenance terms and any renewals thereof are independent of the expiration of the Centralized Contract term and shall not automatically renew.

Maintenance shall include, at a minimum, (i) the provision of Error Corrections, updates, enhancements, revisions, fixes, upgrades and New Licensed Software Releases to Licensee, and (ii) help desk assistance with locally accessible “800” or toll free, local telephone service, or alternatively on-line help desk accessibility. Contractor shall maintain the Product so as to provide Licensee with the ability to utilize the Product in accordance with the Product Documentation without significant functional downtime to its ongoing business operations during the technical support/maintenance term.

Authorized User shall not be required to purchase maintenance for use of Product, and may discontinue maintenance at the end of any current maintenance term upon notice to Contractor. In the event that Authorized User does not initially acquire or discontinues maintenance of licensed Product, it may, at any time thereafter, reinstate maintenance for Product without any additional penalties or other charges, by paying Contractor the amount which would have been due under the Contract for the period of time that such maintenance had lapsed, at then current NYS net maintenance rates.

e. Permitted License Transfers As Licensee’s business operations may be altered, expanded or diminished, licenses granted hereunder may be transferred or combined for use at an alternative or consolidated Site not originally specified in the license, including transfers between Agencies (“permitted license transfers”). Licensee(s) do not have to obtain the approval of Contractor for permitted license transfers, but must give thirty (30) days prior written notice to Contractor of such move(s) and certify in writing that the Product is not in use at the prior Site. There shall be no additional license or other transfer fees due Contractor, provided that: (i) the maximum capacity of the consolidated machine is equal to the combined individual license capacity of all licenses running at the consolidated or transferred Site (e.g., named users, seats, or MIPS); or (ii) if the maximum capacity of the consolidated machine is greater than the individual license capacity being transferred, a logical or physical partition or other means of restricting access will be maintained within the computer system so as to restrict use and access to the Product to that unit of licensed capacity solely dedicated to beneficial use for Licensee. In the event that the maximum capacity of the consolidated machine is greater than the combined individual license capacity of all licenses running at the consolidated or transferred Site, and a logical or physical partition or other means of restricting use is not available, the fees due Contractor shall not exceed the fees otherwise payable for a single license for the upgrade capacity.

f. Restricted Use By Outsourcers, Facilities Management, Service Bureaus, or Other Third Parties Outsourcers, facilities management or service bureaus retained by Licensee shall have the right to use the Product to maintain Licensee’s business operations, including data processing, for the time period that they are engaged in such activities, provided that: (i) Licensee gives notice to Contractor of such party, site of intended use of the Product, and means of access; and (ii) such party has executed, or agrees to execute, the Product manufacturer’s standard nondisclosure or restricted use agreement which executed agreement shall be accepted by the Contractor (“Non-Disclosure Agreement”); and (iii) if such party is engaged in the business of facility management, outsourcing, service bureau or other services, such third party will maintain a logical or physical partition within its computer system so as to restrict use and access to the program to that portion solely dedicated to beneficial use for Licensee. In no event shall Licensee assume any liability for third party’s compliance with the terms of the Non-Disclosure Agreement, nor shall the Non-Disclosure Agreement create or impose any liabilities on the State or Licensee.

Any third party with whom a Licensee has a relationship for a State function or business operation, shall have the temporary right to use Product (e.g., JAVA Applets), provided that such use shall be limited to the time period during which the third party is using the Product for the function or business activity.

g. Archival Back-Up and Disaster Recovery Licensee may use and copy the Product and related Documentation in connection with: (i) reproducing a reasonable number of copies of the Product for archival backup and disaster recovery procedures in the event of destruction or corruption of the Product or disasters or emergencies that require Licensee to restore backups or to initiate disaster recovery procedures for its platform or operating systems; (ii) reproducing a reasonable number of copies of the Product and related Documentation for cold site storage. The phrase “cold site” storage shall be defined as a restorable back-up copy of the Product not to be installed until and after the declaration by the Licensee of a disaster; (iii) reproducing a back-up copy of the Product to run for a reasonable period of time in conjunction with a documented consolidation or transfer otherwise allowed herein. “Disaster Recovery” shall be defined as the installation and storage of Product in ready-to-execute, back-up computer systems prior to disaster or breakdown which is not used for active production or development.

h. Confidentiality Restrictions The Product is a trade secret, copyrighted and proprietary product. Licensee and its employees will keep the Product strictly confidential, and Licensee will not disclose or otherwise distribute or reproduce any Product to anyone other than as authorized under the terms of Contract. Licensee will not remove or destroy any proprietary markings of Contractor.

i. Restricted Use by Licensee Except as expressly authorized by the Terms of License, Licensee shall not: (i) copy the Product; (ii) cause or permit reverse compilation or reverse assembly of all or any portion of the Product; or (iii) export the Licensed Software in violation of any U.S. Department of Commerce export administration regulations.

65. PRODUCT ACCEPTANCE Unless otherwise provided by mutual agreement of the Authorized User and the Contractor, an Authorized User shall have thirty (30) days from the date of delivery to accept hardware Products and sixty (60) days from the date of delivery to accept all other Product. Where the Contractor is responsible for installation, acceptance shall be from completion of installation. Title or other property interest and risk of loss shall not pass from Contractor to the Authorized User until the Products have

been accepted. Failure to provide notice of acceptance or rejection or a deficiency statement to the Contractor by the end of the period provided for under this clause constitutes acceptance by the Authorized User as of the expiration of that period. The license term shall be extended by the time periods allowed for trial use, testing and acceptance unless the Commissioner or Authorized User agrees to accept the Product at completion of trial use.

Unless otherwise provided by mutual agreement of the Authorized User and the Contractor, Authorized User shall have the option to run testing on the Product prior to acceptance, such tests and data sets to be specified by Authorized User. Where using its own data or tests, Authorized User must have the tests or representative set of data available upon delivery. This demonstration will take the form of a documented installation test, capable of observation by the Authorized User, and shall be made part of the Contractor's standard documentation. The test data shall remain accessible to the Authorized User after completion of the test.

In the event that the documented installation test cannot be completed successfully within the specified acceptance period, and the Contractor or Product is responsible for the delay, Authorized User shall have the option to cancel the order in whole or in part, or to extend the testing period for an additional thirty (30) day increment. Authorized User shall notify Contractor of acceptance upon successful completion of the documented installation test. Such cancellation shall not give rise to any cause of action against the Authorized User for damages, loss of profits, expenses, or other remuneration of any kind.

If the Authorized User elects to provide a deficiency statement specifying how the Product fails to meet the specifications within the testing period, Contractor shall have thirty (30) days to correct the deficiency, and the Authorized User shall have an additional sixty (60) days to evaluate the Product as provided herein. If the Product does not meet the specifications at the end of the extended testing period, Authorized User, upon prior written notice to Contractor, may then reject the Product and return all defective Product to Contractor, and Contractor shall refund any monies paid by the Authorized User to Contractor therefor. Costs and liabilities associated with a failure of the Product to perform in accordance with the functionality tests or product specifications during the acceptance period shall be borne fully by Contractor to the extent that said costs or liabilities shall not have been caused by negligent or willful acts or omissions of the Authorized User's agents or employees. Said costs shall be limited to the amounts set forth in the Limitation of Liability clause for any liability for costs incurred at the direction or recommendation of Contractor. When Product is not accepted, it must be removed by the Contractor from the premises of the Authorized User within ten calendar days of notification of non-acceptance by the Authorized User. Rejected items not removed by the Contractor within the ten calendar day period shall be regarded as abandoned by the Contractor and the Authorized User shall have the right to dispose of Product as its own property. The Contractor shall promptly reimburse the Authorized User for any costs incurred in storage or effecting removal or disposition after the ten calendar day period.

66. AUDIT OF LICENSED PRODUCT USAGE Contractor shall have the right to periodically audit, no more than annually, at Contractor's expense, use of licensed Product at any Site where a copy of the Product resides provided that: (i) Contractor gives Licensee at least thirty (30) days advance written notice, (ii) such audit is conducted during such party's normal business hours, (iii) the audit is conducted by an independent auditor chosen on mutual agreement of the parties. Contractor shall recommend a minimum of three (3) auditing/accounting firms from which the Licensee will select one (1). In no case shall the Business Software Alliance (BSA), Software MAY 2015

Publishers Association (SPA), Software and Industry Information Association (SIIA) or Federation Against Software Theft (FAST) be used directly or indirectly to conduct audits, or be recommended by Contractor; (iv) Contractor and Licensee are each entitled to designate a representative who shall be entitled to participate, and who shall mutually agree on audit format, and simultaneously review all information obtained by the audit. Such representatives also shall be entitled to copies of all reports, data or information obtained from the audit; and (v) if the audit shows that such party is not in compliance, Licensee shall be required to purchase additional licenses or capacities necessary to bring it into compliance and shall pay for the unlicensed capacity at the net pricing in effect under the Contract at time of audit, or if none, then at the Contractor's U.S. commercial list price. Once such additional licenses or capacities are purchased, Licensee shall be deemed to have been in compliance retroactively, and Licensee shall have no further liability of any kind for the unauthorized use of the software.

67. OWNERSHIP/TITLE TO PROJECT DELIVERABLES

a. Definitions

(i) For purposes of this clause, "Products." Deliverables furnished under this Contract by or through Contractor, including existing and custom Products, including, but not limited to: a) components of the hardware environment, b) printed materials (including but not limited to training manuals, system and user documentation, reports, drawings), whether printed in hard copy or maintained on diskette, CD, DVD or other electronic media c) third party software, d) modifications, customizations, custom programs, program listings, programming tools, data, modules, components, and e) any properties embodied therein, whether in tangible or intangible form (including but not limited to utilities, interfaces, templates, subroutines, algorithms, formulas, Source Code, object code).

(ii) For purposes of this clause, "Existing Products." Tangible Products and intangible licensed Products that exist prior to the commencement of work under the Contract. Contractor bears the burden of proving that a particular product was in existence prior to the commencement of the Project.

(iii) For purposes of this clause, "Custom Products." Products, preliminary, final or otherwise, which are created or developed by Contractor, its Subcontractors, partners, employees or agents for Authorized User under the Contract.

b. Title to Project Deliverables Contractor acknowledges that it is commissioned by the Authorized User to perform the services detailed in the Purchase Order. Unless otherwise specified in writing in the Solicitation or Purchase Order, the Authorized User shall have ownership and license rights as follows:

(i) Existing Products:

1. Hardware - Title and ownership of Existing Hardware Product shall pass to Authorized User upon acceptance.

2. Software - Title and ownership to Existing Software Products delivered by Contractor under the Contract that is normally commercially distributed on a license basis by the Contractor or other independent software vendor proprietary owner ("Existing Licensed Product"), whether or not embedded in, delivered or operating in conjunction with hardware or Custom Products, shall remain with Contractor or the proprietary owner of other independent software vendor(s) (ISV). Effective upon acceptance, such Product shall be licensed to Authorized User in accordance with the Contractor or ISV owner's standard license agreement, provided, however, that such standard license, must, at a minimum: (a) grant Authorized User a non-exclusive, perpetual license to use, execute, reproduce, display, perform, adapt (unless Contractor advises Authorized User as part of Contractor's proposal that adaptation will violate existing agreements

or statutes and Contractor demonstrates such to the Authorized User's satisfaction) and distribute Existing Licensed Product to the Authorized User up to the license capacity stated in the Purchase Order or work order with all license rights necessary to fully effect the general business purposes stated in the Solicitation or Authorized User's Purchase Order or work order, including the financing assignment rights set forth in paragraph (c) below; and (b) recognize the State of New York as the Licensee where the Authorized User is a State Agency, department, board, commission, office or institution. Where these rights are not otherwise covered by the ISV's owner's standard license agreement, the Contractor shall be responsible for obtaining these rights at its sole cost and expense. The Authorized User shall reproduce all copyright notices and any other legend of ownership on any copies authorized under this clause.

(ii) Custom Products: Effective upon creation of Custom Products, Contractor hereby conveys, assigns and transfers to Authorized User the sole and exclusive rights, title and interest in Custom Product(s), whether preliminary, final or otherwise, including all trademark and copyrights. Contractor hereby agrees to take all necessary and appropriate steps to ensure that the Custom Products are protected against unauthorized copying, reproduction and marketing by or through Contractor, its agents, employees, or Subcontractors. Nothing herein shall preclude the Contractor from otherwise using the related or underlying general knowledge, skills, ideas, concepts, techniques and experience developed under a Purchase Order, project definition or work order in the course of Contractor's business. Authorized User may, by providing written notice thereof to the Contractor, elect in the alternative to take a non-exclusive perpetual license to Custom Products in lieu of Authorized User taking exclusive ownership and title to such Products. In such case, Licensee on behalf of all Authorized Users shall be granted a non-exclusive perpetual license to use, execute, reproduce, display, perform, adapt and distribute Custom Product as necessary to fully effect the general business purpose(s) as stated in paragraph (b)(i)(2), above.

c. Transfers or Assignments to a Third Party Financing Agent It is understood and agreed by the parties that a condition precedent to the consummation of the purchases under the Contract may be the obtaining of acceptable third party financing by the Authorized User. The Authorized User shall make the sole determination of the acceptability of any financing proposal. The Authorized User will make all reasonable efforts to obtain such financing, but makes no representation that such financing has been obtained as of the date of Bid receipt. Where financing is used, Authorized User may assign or transfer its rights in Licensed Products (existing or custom) to a third party financing entity or trustee ("Trustee") as collateral where required by the terms of the financing agreement. Trustee's sole rights with respect to transferability or use of Licensed Products shall be to exclusively sublicense to Authorized User all of its Licensee's rights under the terms and conditions of the License Agreement; provided, further, however, in the event of any termination or expiration of such sublicense by reason of payment in full, all of Trustee's rights in such Licensed Product shall terminate immediately and Authorized User's prior rights to such Existing Licensed Product shall be revived.

d. Sale or License of Custom Products Involving Tax-Exempt Financing (i.e., Certificates of Participation - COPS) The Authorized User's sale or other transfer of Custom Products which were acquired by the Authorized User using third party, tax-exempt financing may not occur until such Custom Products are, or become, useable. In the event that the Contractor wishes to obtain ownership rights to Custom Product(s), the sale or other transfer shall be at fair market value determined at the time of such sale or other transfer, and must be pursuant to a separate written agreement in a form acceptable to the Authorized User which complies with the terms of this clause.

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e. Contractor's Obligation with Regard to ISV (Third Party) Product Where Contractor furnishes Existing Licensed Product(s) as a project deliverable, and sufficient rights necessary to effect the purposes of this section are not otherwise provided in the Contractor or ISV's standard license agreement, Contractor shall be responsible for obtaining from the ISV third party proprietary owner/developer the rights set forth herein to the benefit of the Authorized User at Contractor's sole cost and expense.

68. PROOF OF LICENSE The Contractor must provide to each Licensee who places a Purchase Order either: (i) the Product developer's certified License Confirmation Certificates in the name of such Licensee; or (ii) a written confirmation from the proprietary owner accepting Product invoice as proof of license. Contractor shall submit a sample certificate, or alternatively such written confirmation from the proprietary developer. Such certificates must be in a form acceptable to the Licensee.

69. PRODUCT VERSION Purchase Orders shall be deemed to reference Manufacturer's most recently released model or version of the Product at time of order, unless an earlier model or version is specifically requested in writing by Authorized User and Contractor is willing to provide such version.

70. CHANGES TO PRODUCT OR SERVICE OFFERINGS

a. Product or Service Discontinuance Where Contractor is the Product Manufacturer/Developer, and Contractor publicly announces to all U.S. customers ("date of notice") that a Product is being withdrawn from the U.S. market or that maintenance service or technical support provided by Contractor ("withdrawn support") is no longer going to be offered, Contractor shall be required to: (i) notify the Commissioner, each Licensee and each Authorized User then under contract for maintenance or technical support in writing of the intended discontinuance; and (ii) continue to offer Product or withdrawn support upon the Contract terms previously offered for the greater of: (a) the best terms offered by Contractor to any other customer, or (b) not less than twelve (12) months from the date of notice; and (iii) at Authorized User's option, provided that the Authorized User is under contract for maintenance on the date of notice, either: provide the Authorized User with a Product replacement or migration path with at least equivalent functionality at no additional charge to enable Authorized User to continue use and maintenance of the Product.

In the event that the Contractor is not the Product Manufacturer, Contractor shall be required to: (i) provide the notice required under the paragraph above, to the entities described within five (5) business days of Contractor receiving notice from the Product Manufacturer, and (ii) include in such notice the period of time from the date of notice that the Product Manufacturer will continue to provide Product or withdraw support.

The provisions of this subdivision (a) shall not apply or eliminate Contractor's obligations where withdrawn support is being provided by an independent Subcontractor. In the event that such Subcontractor ceases to provide service, Contractor shall be responsible for subcontracting such service, subject to State approval, to an alternate Subcontractor.

b. Product or Service Re-Bundling In the event that Contractor is the Product manufacturer and publicly announces to all U.S. customers ("date of notice") that a Product or maintenance or technical support offering is being re-bundled in a different manner from the structure or licensing model of the prior U.S. commercial offering, Contractor shall be required to: (i) notify the State and each Authorized User in writing

of the intended change; (ii) continue to provide Product or withdrawn support upon the same terms and conditions as previously offered on the then-current NYS Contract for the greater of: (a) the best terms offered by Contractor to any other customer, or (b) not less than twelve (12) months from the date of notice; and (iii) shall submit the proposed rebundling change to the Commissioner for approval prior to its becoming effective for the remainder of the Contract term. The provisions of this section do not apply if the Contractor is not the Product manufacturer.

71. NO HARDSTOP/PASSIVE LICENSE MONITORING

Unless an Authorized User is otherwise specifically advised to the contrary in writing at the time of order and prior to purchase, Contractor hereby warrants and represents that the Product and all upgrades do not and will not contain any computer code that would disable the Product or upgrades or impair in any way its operation based on the elapsing of a period of time, exceeding an authorized number of copies, advancement to a particular date or other numeral, or other similar self-destruct mechanisms (sometimes referred to as “time bombs,” “time locks,” or “drop dead” devices) or that would permit Contractor to access the Product to cause such disablement or impairment (sometimes referred to as a “trap door” device). Contractor agrees that in the event of a breach or alleged breach of this provision that Authorized User shall not have an adequate remedy at law, including monetary damages, and that Authorized User shall consequently be entitled to seek a temporary restraining order, injunction, or other form of equitable relief against the continuance of such breach, in addition to any and all remedies to which Authorized User shall be entitled.

72. SOURCE CODE ESCROW FOR LICENSED PRODUCT

If Source Code or Source Code escrow is offered by either Contractor or Product manufacturer or developer to any other commercial customers, Contractor shall: (i) provide Licensee with the Source Code for the Product; or (ii) place the Source Code in a third party escrow arrangement with a designated escrow agent who shall be named and identified to the State, and who shall be directed to release the deposited Source Code in accordance with a standard escrow agreement acceptable to the State; or (iii) certify to the State that the Product manufacturer/developer has named the State, acting by and through the Authorized User, and the Licensee, as a named beneficiary of an established escrow arrangement with its designated escrow agent who shall be named and identified to the State and Licensee, and who shall be directed to release the deposited Source Code in accordance with the terms of escrow. Source Code, as well as any corrections or enhancements to such Source Code, shall be updated for each new release of the Product in the same manner as provided above and such updating of escrow shall be certified to the State in writing. Contractor shall identify the escrow agent upon commencement of the Contract term and shall certify annually that the escrow remains in effect in compliance with the terms of this clause.

The State may release the Source Code to Licensees under this Contract who have licensed Product or obtained services, who may use such copy of the Source Code to maintain the Product.

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QUICK GUIDE TO WORKERS' COMPENSATION AND DISABILITY INSURANCE DOCUMENTATION

The Office of the State Comptroller requires proof of (1) workers' compensation insurance coverage and (2) disability benefits insurance coverage when a state agency submits any type of agreement to the comptroller's office for approval.

This document is intended to assist businesses and other parties for expert service contracts to efficiently determine what form they should complete and submit concerning the New York State Workers' Compensation Program and Disability Insurance Program. This document does not constitute legal advice.

As an initial matter, businesses and other parties may wish to explore whether they are exempt from carrying (1) workers' compensation insurance coverage and/or (2) disability benefits insurance coverage. The business or other party can fill out Form CE-200 which is an Affidavit of Exemption from the workers' compensation and disability insurance coverage requirements if he or she is not required to carry the insurances.

Businesses and other parties may seek an exemption from workers' compensation requirement if:

- B. The business is owned by one individual and is not a corporation. Other than the owner, there are no employees, day labor, leased employees, borrowed employees, part-time employees, unpaid volunteers (including family members) or subcontractors.
- C. The business is a LLC, LLP, PLLP or a RLLP; OR is a partnership under the laws of New York State and is not a corporation. Other than the partners or members, there are no employees, day labor, leased employees, borrowed employees, part-time employees, unpaid volunteers (including family members) or subcontractors.
- D. The business is a one person owned corporation, with that individual owning all of the stock and holding all offices of the corporation. Other than the corporate owner, there are no employees, day labor, leased employees, borrowed employees, part-time employees, other stockholders, unpaid volunteers (including family members) or subcontractors.
- E. The business is a two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (each individual must hold an office and own at least one share of stock). Other than the two corporate officers/owners, there are no employees, day labor, leased employees, borrowed employees, part-time employees, other stockholders, unpaid volunteers (including family members) or subcontractors.

Business and other parties may seek an exemption from disability requirement if:

- B. The business MUST be either: 1) owned by one individual; **OR** 2) is a partnership (including LLC, LLP, PLLP, RLLP, or LP) under the laws of New York State and is not a corporation; **OR** 3) is a one or two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (in a two person owned corporation each individual must be an officer and own at least one share of stock); **OR** 4) is a business with no NYS location. In addition, the business does not require disability benefits coverage at this time since it has not employed one or more individuals on at least 30 days in any calendar year in New York State. (Independent contractors are not considered to be employees under the Disability Benefits Law.)

There are other potential grounds for an exemption, but they have not been discussed in this document. The paper version of form CE-200 is attached should the contractor wish to review it.

There are two ways to file the CE-200 Form: (1) via a paper submission or (2) and electronic submission.

Paper - The CE-200 application form should be completed in its entirety and submitted to the Workers' Compensation Board by mail or fax. The application will be processed in the order received and a certificate of attestation of exemption will be mailed to the applicant. This process may take up to four weeks to complete.

Electronic - For those who require an exemption immediately, please access the on-line application that can be found on the Board's website, at www.wcb.ny.gov. Click the "WC/DB Exemption" button on the Board's main webpage and then click on "Request for WC/DB Exemption (Form CE-200)." Complete the CE-200 application questionnaire on-line. You will be able to immediately print the certificate of attestation of exemption after completing the on-line application to document that you have submitted the CE-200 form with the Workers' Compensation Board.

Businesses and other parties must provide a copy of the certificate of attestation (Form CE-200) or acceptable certification of (1) workers' compensation insurance coverage and (2) disability benefits insurance coverage to the Attorney General's Budget and Fiscal Management Bureau.

The five acceptable workers' compensation insurance certification forms are:

- Form C-105.2 – Certificate of Workers' Compensation Insurance issued by private insurance carriers;
- Form U-26.3-- issued by the State Insurance Fund;
- Form SI-12 – Certificate of Workers' Compensation Self-Insurance;
- Form GSI-105.2 Certificate of Participation in Workers' Compensation Group Self-Insurance; or
- Form CE-200 -- Certificate of Attestation of Exemption from Workers' Compensation and/or Disability Benefits insurance coverage.

The three acceptable disability insurance certification forms are:

- Form DB-120.1 - Certificate of Disability Benefits Insurance; or
- Form DB-155- Certificate of Disability Benefits Self Insurance
- Form CE-200 -- Certificate of Attestation of Exemption from Workers' Compensation and/or Disability Benefits insurance coverage. (Conveniently, this is the same form for exemption from Workers Compensation Insurance.)

Please note the NYS Office of the Attorney General should be listed as the "issuing government agency" on form CE-200 or "entity requesting proof of coverage" on forms C-105.2, GSI-105.2 and DB-120.1.

Questions regarding coverage requirements may be directed to Walter Peretti of the Workers' Compensation Board's Compliance Division at 518-402-8330 or walter.peretti@wcb.ny.gov.

New York State Workers' Compensation Board
Application for Certificate of Attestation of Exemption
from New York State Workers' Compensation and/or Disability Benefits Insurance Coverage.

For NYS workers' compensation exemption, this application may only be completed by entities with no employees or out-of-state entities obtaining contracts for which ALL work is performed outside of NYS. For NYS disability benefits exemption, it may only be completed by entities without employees or those with employees, as defined by the NYS Disability Benefits Law, working in NYS for less than thirty days in a calendar year.

A certificate of attestation of exemption can ONLY be used to attest to a government entity that the applicant requesting a permit, license or contract from that government entity is not required to carry workers' compensation and/or disability benefits insurance.

The application must be completed in its entirety and submitted to the Workers' Compensation Board by fax or mail. The application will be processed in the order received and a certificate of attestation of exemption will be mailed to the applicant. This process may take up to four weeks.

To obtain a certificate immediately, please use the *on-line application* at www.wcb.ny.gov. Once the application is completed on-line, you can immediately print the certificate on your printer.

Please review the separate instructions (form CE-200 instructions) prior to completing this application. Please print clearly.

1. Applicant Personal Information:

First Name: _____ Last Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Country (If other than U.S.) _____

Personal Phone Number (_____) _____

2. Your Title (check only one)

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Sole Proprietor | <input type="checkbox"/> Treasurer |
| <input type="checkbox"/> President | <input type="checkbox"/> Partner |
| <input type="checkbox"/> Vice President | <input type="checkbox"/> Member |
| <input type="checkbox"/> Secretary | <input type="checkbox"/> Trustee |
| <input type="checkbox"/> Homeowner | <input type="checkbox"/> Board Member |
| <input type="checkbox"/> Other (please provide title) _____ | |

3. Legal Entity Information:

Business Federal ID (If none, enter social security number): _____

Legal Entity Name: _____

Doing Business As Name _____

Business Phone: (_____) _____ E-mail _____

Check here if business address is the same as the applicant's personal address. If different, enter business address below.

Business Street Address: _____

City: _____ State: _____ Zip: _____

Country (If other than U.S.) _____

4. Permit/License/Contract Information:

A. Nature of Business:(please check only one)

- Construction/Carpentry
- Demolition
- Plumbing
- Restaurant / Food Service
- Food Cart Vendor
- Homeowner
- Bar / Tavern
- Other (please explain) _____
- Electrical
- Landscaping
- Farm
- Trucking / Hauling
- Horse Trainer/Owner
- Hotel / Motel
- Mobile - Home Park

B. Applying for:

- License (list type) _____
- Permit (list type) _____
- Contract with Government Agency

Issuing Government Agency: _____
(e.g. New York City Building Department, Ulster County Health Department, New York State Department of Labor, etc.)

5. Job Site Location Information: (Required if applying for a building, plumbing, or electrical permit)

A. Job Site Address

Street address _____

City: _____ State: _____ Zip: _____ County: _____

B. Dates of project: (mm/dd/yyyy) _____ to:(mm/dd/yyyy) _____

Estimated Dollar amount of project:

- \$0 - \$10,000
- \$10,001 - \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$100,000
- Over \$100,000

6. Partners/Members/Corporate Officers -must list all with titles except for limited partnerships which must include only general partners. Sole proprietors can skip this section.

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

(Attach additional sheet if necessary)

Employees of the Workers' Compensation Board cannot assist applicants in answering questions in the following two sections. Please contact an attorney if you have any questions regarding these sections.

7. Please select the reason that the legal entity is NOT required to obtain New York State Specific Workers' Compensation Insurance Coverage:

- A. The applicant is NOT applying for a workers' compensation certificate of attestation of exemption and will show a separate certificate of NYS workers' compensation insurance coverage.
- B. The business is owned by one individual and is not a corporation. Other than the owner, there are no employees, day labor, leased employees, borrowed employees, part-time employees, unpaid volunteers (including family members) or subcontractors.
- C. The business is a LLC, LLP, PLLP or a RLLP; OR is a partnership under the laws of New York State and is not a corporation. Other than the partners or members, there are no employees, day labor, leased employees, borrowed employees, part-time employees, unpaid volunteers (including family members) or subcontractors.
- D. The business is a one person owned corporation, with that individual owning all of the stock and holding all offices of the corporation. Other than the corporate owner, there are no employees, day labor, leased employees, borrowed employees, part-time employees, other stockholders, unpaid volunteers (including family members) or subcontractors.
- E. The business is a two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (each individual must hold an office and own at least one share of stock). Other than the two corporate officers/owners, there are no employees, day labor, leased employees, borrowed employees, part-time employees, other stockholders, unpaid volunteers (including family members) or subcontractors.
- F. The applicant is a nonprofit (under IRS rules) with NO compensated individuals providing services except for clergy; or is a religious, charitable or educational nonprofit (Section 501(c)(3) under the IRS tax code) with no compensated individuals providing services except for clergy providing ministerial services; and persons performing teaching or nonmanual labor. [Manual labor includes but is not limited to such tasks as filing; carrying materials such as pamphlets, binders, or books; cleaning such as dusting or vacuuming; playing musical instruments; moving furniture; shoveling snow; mowing lawns; and construction of any sort.]
- G. The business is a farm with less than \$1,200 in payroll the preceding calendar year.
- H. The applicant is a homeowner serving as the general contractor for his/her primary/secondary personal residence. The homeowner has no employees, day labor, leased employees, borrowed employees, part-time employees or subcontractors. The homeowner ONLY has uncompensated friends and family working on his/her residence.
- I. Other than the business owner(s) and individuals obtained from a temporary service agency, there are no employees, day labor, leased employees, borrowed employees, part-time employees, unpaid volunteers (including family members) or subcontractors. Other than the business owner(s), all individuals providing services to the business are obtained from a temporary service agency and that agency has covered these individuals for New York State workers' compensation insurance. In addition, the business is owned by one individual or is a partnership under the laws of New York State and is not a corporation; or is a one or two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (in a two person owned corporation, each individual must be an officer and own at least one share of stock). A Temporary Service Agency is a business that is classified as a temporary service agency under the business's North American Industrial Classification System (NAICS) code.
Temporary Service Agency

Name _____ Phone # _____

- J. The out-of-state entity has no NYS employees and/or NYS subcontractors AND ALL work related to the permit, license or contract is done outside of NYS; OR ALL employees are direct employees of a government entity outside of New York. Please provide coverage information.

Carrier _____ Policy # _____

Policy start date _____ Policy expiration date _____

8. Please select the reason that the legal entity is NOT required to obtain New York State Statutory Disability Benefits Insurance Coverage:

- A. The applicant is NOT applying for a disability benefits exemption and will show a separate certificate of NYS statutory disability benefits insurance coverage.
- B. The business MUST be either: 1) owned by one individual; **OR** 2) is a partnership (including LLC, LLP, PLLP, RLLP, or LP) under the laws of New York State and is not a corporation; **OR** 3) is a one or two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (in a two person owned corporation each individual must be an officer and own at least one share of stock); **OR** 4) is a business with no NYS location. In addition, the business does not require disability benefits coverage at this time since it has not employed one or more individuals on at least 30 days in any calendar year in New York State. (Independent contractors are not considered to be employees under the Disability Benefits Law.)
- C. The applicant is a political subdivision that is legally exempt from providing statutory disability benefits coverage.
- D. The applicant is a nonprofit (under IRS rules) with NO compensated individuals providing services except for clergy; or is a religious, charitable or educational nonprofit (Section 501(c)(3) under the IRS tax code) with no compensated individuals providing services except for executive officers, clergy, sextons, teachers or professionals.
- E. The business is a farm and all employees are farm laborers.
- F. The applicant is a homeowner serving as the general contractor for his/her primary/secondary personal residence. The homeowner has not employed one or more individuals on at least 30 days in any calendar year in New York State. (Independent contractors are not considered to be employees under the Disability Benefits Law.)
- G. Other than the business owner(s) and individuals obtained from the temporary service agency, there are no other employees. Other than the business owner(s), all individuals providing services to the business are obtained from a temporary service agency and that agency has covered these individuals for New York State disability benefits insurance. In addition, the business is owned by one individual or is a partnership under the laws of New York State and is not a corporation; or is a one or two person owned corporation, with those individuals owning all of the stock and holding all offices of the corporation (in a two person owned corporation, each individual must be an officer and own at least one share of stock). A Temporary Service Agency is a business that is classified as a temporary service agency under the business's North American Industrial Classification System (NAICS) code.

9. I affirm that due to my position with the above-named business I have the knowledge, information and legal authority to make this Application for Certificate of Attestation of Exemption. I hereby affirm that the information provided above is true and that I have not submitted any materially false statements and I make this application for a Certificate of Attestation of Exemption under the penalties of perjury. I further affirm that I understand that any false statement, representation, or concealment will subject me to felony prosecution, including jail and civil liability in accordance with the Workers' Compensation Law and all other New York State Laws.

Signature Title Date