



# **REBID ROSCOE WEST HALL LOWER-LEVEL AV PROJECT**

TCNJ Advertised Bid # AB250012

**COVER SHEET**

**INVITATION TO BID**

**MILESTONE SCHEDULE**

**CONSTRUCTION BID PROPOSAL FORM**

**MANDATORY DOCUMENTS**

**CONTRACT**

**GENERAL CONDITIONS**

**GENERAL WORK DESCRIPTION**

**DRAWINGS**

**January 6, 2025**





Please place the following advertisement in the Legal Section of Classified Advertising. Please ensure that the invoice for this advertisement is prepared and an affidavit forwarded to The College of New Jersey, Office of Finance and Business Services, Administrative Services Building, Room 201, P.O. Box 7718, Ewing, NJ 08628-0718.

To be published on **January 6, 2025 in the Trentonian**. Contact person regarding placement of ad is Lauren Manning (609) 771-2894.

**THE COLLEGE OF NEW JERSEY  
ADVERTISEMENT FOR BIDS  
BID #AB250012**

Under the provisions of the State College Contracts Law, Chapter 64 of Title 18A, The College of New Jersey will receive sealed bids for the **REBID Roscoe West Hall Lower Level AV Project** until **2:00 P.M. on the 28<sup>th</sup> day of January, 2025** at The College's Office of Finance and Business Services, Administrative Services Building, Second Floor, Room 201, Route 31 (Pennington Road), Ewing Township, New Jersey. At 2:00 P.M. all bids will be publicly opened and read in Room 203 of the Administrative Services Building.

No bidder may submit more than one bid.

Bid Documents may be obtained on/after **January 6, 2025 via our website** (<https://bids.tcnj.edu/home/construction-projects/>).

A **pre-bid conference/on-site inspection** is scheduled on **January 10, 2025 at 10:00 A.M.** in the West Hall Lobby of Roscoe Hall, located on The College's Ewing Township, New Jersey campus on 2000 Pennington Road. While attendance is not mandatory, bidders are strongly encouraged to attend.

Bidders are required to comply with the requirements of P.L. 1975 c. 127 (N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27 - Affirmative Action); the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.; N.J.S.A. 52:25-24.2, "Statement of Ownership Disclosure"; the Public Works Contractor Registration Act (N.J.S.A. 34:11-56.48 et seq.); the New Jersey Business Registration of Public Contractors provisions (N.J.S.A. 52:32-44) and all amendments thereto.

A bid guarantee is required in the amount of 10% of the total bid. Bid guarantee shall consist of a certified check or cashier's check to the order of The College of New Jersey, or an individual or annual bid bond issued by an insurance company or surety company authorized to do business in the State of New Jersey. The successful Bidder(s) is required to provide a Performance and Payment Bond equal to 100% of the contract. A Surety Disclosure Statement and Certification form must accompany the performance bond.

The College will award the contract to the lowest responsible bidder who satisfies the qualification criteria as set forth in the contract documents.

The College of New Jersey reserves the right to reject all bids or to waive any minor informalities in the bidding in accordance with law. No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the consent of The College of New Jersey.

The College requires that its contractors/vendors agree to take all necessary and responsible steps, in accordance with N.J.S.A. 52:32-17 et seq. and N.J.A.C. 17:13-1 et seq. to ensure that SBE's have these opportunities, as an aid in meeting the commitment of its SBE Programs and to ensure that DVOBs have these opportunities per N.J.S.A. 52:32-31.1 et seq. (P.L. 2015, c. 116) in meeting the commitment of its DVOB Programs.





## **REBID ROSCOE WEST HALL LOWER LEVEL AV PROJECT**

### **MILESTONE SCHEDULE**

**As of January 6, 2024**

Request for Proposal Released	January 6, 2025
Pre-bid Meeting (Roscoe West Hall Lobby at 10:00AM)	January 10, 2025
Cut off for questions	January 13, 2025
Addendum Issued by	January 15, 2025
Bids Received	January 28, 2025
Notice of Intent to Award issued by	January 30, 2025
Notice to Proceed issued by	February 10, 2025
Submittals & Permit	February – March, 2025
AV Installation Begins in Field	April, 2025
Substantial Completion by	May 30, 2025
Final DCA Inspections	June 2 – 6, 2025
Punch List Completion by	June 27, 2025

**\*Note\***

- This project consists of bi-weekly project meetings with TCNJ, the General Contractor (M&M Construction), and Architect (NORR) on Thursdays at 10:00 AM. The AV vendor must include in their bid the cost to attend bi-weekly project meetings starting immediately after this contract is awarded and until the project is substantially complete.
- To access the IT and overall drawings for the Roscoe West Hall Lower Level Renovation, please visit our [website](#).
- Liquidated damages are 1/20th of 1% of the contract value.





**Bid # AB250012**  
**For: REBID Roscoe West Hall**  
**Lower Level AV Project**

Event	Date	Time
<b>Pre-bid Conference and Site Visit at The College of New Jersey's Roscoe West Hall Lobby</b>	01/10/2025	10:00 AM
<b>Question Cut Off Date</b> (Refer to Bid Section # 2 for more information.)	01/13/2025	4:00 PM
<b>Addendum Date</b> (Refer to Bid Section # 2 for more information.)	01/15/2025	11:00 AM
<b>Bid Submission Due Date</b> (Refer to Bid Section # 3 for more information.)	01/28/2025	2:00 PM

Dates are subject to change. All times contained in the Bid refer to Eastern Time.  
All changes will be reflected in Addendum to the Bid posted on the College's website.

**Bid Issued By:**

The College of New Jersey  
Office of Finance & Business Services  
Purchasing Department  
Administrative Services Building, Room 201  
2000 Pennington Road  
Ewing, NJ 08628  
Phone: (609) 771-2894  
<https://bids.tcnj.edu/home/construction-projects/>  
Assigned Purchasing Contact: Lauren Manning  
E-mail: [manningl@tcnj.edu](mailto:manningl@tcnj.edu)

Date Issued: 01/06/2025  
Fiscal Year: 2025



### **Required Procurement Documents & Bidder's Checklist**

This bid proposal MUST be received by The College of New Jersey, Purchasing Department before or at 2:00 p.m. on Tuesday, January 28, 2025 at which time responses will be publicly opened and read. Any proposal arriving at the Purchasing Department after the submission due date and time will not be accepted.

The following Bidder's Checklist is provided as an aid to the bidder. It does not in any way relieve the bidder of its responsibility to ensure that its bid proposal is complete. It is the bidder's responsibility to ensure documents are submitted and that all requirements of the bid solicitation have been met.

<b>Procurement Documentation &amp; Bidder's Checklist</b>		
<b>FORMS, REGISTRATIONS, AND CERTIFICATIONS THAT MUST BE SUBMITTED BY THE BIDDER AT THE TIME OF SUBMISSION OF THE BID. FAILURE TO INCLUDE THE BELOW REQUESTED DOCUMENTATION MAY RESULT IN REJECTION OF BIDDER'S SUBMISSION.</b>		
<b>Required</b>		<b>Vendor's Initials next to each item submitted with proposal</b>
X	Bidder Information	
X	General Agreement including Acknowledgement of Receipt of Addendum (if any issued)	
X	Cost Sheet	
X	Subcontractor Information Page	
X	Small Business, Minority and/or Female-owned Business Reporting	
X	Acknowledgement of Mandatory Equal Employment Opportunity Language for Construction Contracts (NJAC 17:27-1.1 et seq. - P.L. 1975 C.127)	
X	Completed Statement of Ownership Disclosure (N.J.S.A. 52:25-24.2)	
X	Completed Non-Collusion Affidavit	
X	Completed Vendor Qualification Sheet	
X	Enclosed Certified Check, Cashier's Check or Bid Bond for ten percent (10%) of the amount of the bid	
X	Copy of Electrical License (the license must be valid at the time of bid.)	
	Copy of latest Experience Modification Rating (EMR Safety Rating). The College requires an average rating over the last 5 years of 1.25 or less.	
<b>FORMS, REGISTRATIONS, AND CERTIFICATIONS THAT MUST BE SUBMITTED BY THE BIDDER PRIOR TO AWARD (EXCEPT AS OTHERWISE NOTED BELOW).</b>		
X	Completed Certification of Non-Involvement in Prohibited Activities in Russia (P.L. 2022, c.3)	
X	Completed Disclosure of Investment Activities in Iran (N.J.S.A. 52:32-58)	
X	Completed Federal Non-Debarment Certification (N.J.S.A. 52:32-44.1)	
X	Copy of Public Works Contractor Registration Certificate for the bidder and disclosed subcontractors (the certificate must be valid at the time of bid.)	
X	Proof of Affirmative Action Compliance - Initial Project Workforce Report, AA-201 (must be submitted after notification of award, prior to signing of the contract)	
X	New Jersey Business Registration Certificate (N.J.S.A. 52:32-44)	
X	Taxpayer Identification Request (W-9 Form)	
X	Certificate of Insurance	



**THE COLLEGE OF NEW JERSEY**  
**Construction Bid Proposal Form**

Office of Finance & Business Services  
Administrative Services Building, Rm. 201  
2000 Pennington Road  
Ewing, New Jersey 08628-0718

**Bid Number: AB250012**  
**Bid Due Date: January 28, 2025**

**Project Name: REBID Roscoe West Hall Lower Level AV Project**

**BIDDER INFORMATION**

Firm Name:

Telephone Number:

Contact Person:  
Address:

Fax Number:

Email Address:  
Federal I.D. Number:

**SOLICITATION OF CONSTRUCTION BIDS**

**1. BID PROPOSALS ARE SOLICITED AS FOLLOWS:**

- A. Single Bid (Lump Sum) which combines all trades.
  - 1. The total number and types of trades are set forth in the Specifications.
  - 2. Bidder enters the Bid Price on the line provided on the Cost Sheet.
  - 3. Pursuant to the requirements of N.J.S.A. 18A:64-76.1., bidder lists the names of the subcontractors on the Subcontractor Information page.

**2. THE SCOPE OF WORK INCLUDES:**

- A. The purchase, installation, and programming of the AV equipment for Roscoe Hall Lower Level. The awarded contractor will be responsible for pulling the electrical permit with the State of NJ, Division of Consumer Affairs.
- B. See Specifications and Drawings for Details (included in Bid package). To access the IT and overall drawings for the Roscoe West Hall Lower Level Renovation, please visit our [website](#).
- C. The College may issue Addenda or Clarifications which may include additions to or deletions from the scope of work; changes to the Specifications, Drawings, and proposal form; and clarifications of requirements. Bidder is advised to review all Addenda and/or clarifications carefully, and shall note the receipt of same with their bid package.



## GENERAL INSTRUCTIONS AND REQUIREMENTS

### 1. PRICES

- A. Bidder submits prices for the Base Bid and any Alternate Proposals and Unit Prices which are listed for the contract of the bid. If there is no cost associated with the Alternate or Unit Price, bidder is required to enter “0.00” or “no change”.
  - 1. Prevailing wage rates apply (Mercer County).
  - 2. Bid is to remain good for sixty (60) days after the Bid Due Date.

### 2. QUESTIONS

- A. Direct inquiries and correspondence relating to this proposal form and questions regarding the technical specifications and requests for clarification must be submitted in writing via **email to [manningl@tcnj.edu](mailto:manningl@tcnj.edu)** and must be received **prior to 4:00 PM on January 13, 2025**.
- B. Should any questions be received, the notice of revisions or addenda to advertisements or bid documents relating to bids shall be published in a legal newspaper or newspapers no later than seven days, Saturdays, Sundays and holidays excepted, prior to the bid due date. The notice shall be provided to any person who has submitted a bid or who has received a bid package, in one of the following ways: in writing by certified mail or (b) by certified facsimile transmission, meaning that the sender’s facsimile machine produces a receipt showing date and time of transmission and that the transmission was successful or (c) by a delivery service that provides certification of delivery to the sender.
- C. The addendum or clarification will be available on **January 15, 2025 on the College’s website at <https://bids.tcnj.edu/>**. **If an addendum and/or clarification is posted, it SHOULD be noted in the General Agreement section of the bidder’s proposal. Failure to do so may subject Bidder to disqualification.**

### 3. HOW TO SUBMIT THE COMPLETED CONSTRUCTION BID PROPOSAL FORM

- A. Bidder places all pages of the completed form and the requisite additional documents in an envelope, seals the envelope, and labels it with his/her firm name, address, and “Sealed Bid Enclosed for (**Bid Number and Project Name**)”.
- B. Bidder mails or deliver by hand the sealed bid, no later than **2:00 p.m., January 28, 2025**, to The College of New Jersey, Attention: Lauren Manning for (specify the Bid Number), Office of Finance & Business Services, Room 201, 2000 Pennington Road, Ewing, New Jersey 08628-0718. **At 2:00 p.m., all bids will be publicly opened and read in Room 203 of the Administrative Services Building.**
- C. Contractors are advised that the U.S. Postal Service and all express mail companies deliver to The College’s Mail Room or Receiving Department, not directly to the Office of Budget & Finance. The College is not responsible for lost or misdirected bids.

### 4. BOND REQUIREMENTS AND SURETY STANDARDS – REQUIRED FOR THIS PROJECT

- A. A bid guarantee is required in the amount of 10% of the total bid. Bid guarantee shall consist of a certified check or cashier’s check to the order of The College of New Jersey, or an individual or annual bid bond issued by an insurance company or surety company authorized to do business in the State of New Jersey. The successful bidder must submit a Performance and Payment Bond equal to 100% of the contract. A completed Surety Disclosure Statement and Certification must accompany the Performance and Payment Bond.
  - 1. The Performance and Payment Bond form and a sample Surety Disclosure Statement and Certification form are included at the end of this Construction Bid Proposal Form.
- C. All bid deposits shall be returned within three (3) days, Sunday and holidays excepted, after the awarding of the contract and the approval of the successful bidder’s performance bond, if any, the bid guaranty of the remaining bidders shall be returned to them.
- D. Should the successful bidder fail to enter into said contract after acceptance of bid by the College, then the check or security deposited by that bidder shall, at the option of the College, be retained as liquidated damages, or if Bid Bond has been supplied, principal and surety shall be liable to the amount of the Bid Bond.



- E. Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified copy of their Power of Attorney to sign said bonds.
- F. Contractor shall provide a Maintenance Bond at job completion for a period of one year for 100% of the final contract price.

## **5. LICENSES, CERTIFICATIONS, REGISTRATIONS, QUALIFICATIONS**

- A. The bidder or, as applicable, its subcontractors shall at the time of bid have those required licenses, certifications, registrations, qualifications and the like ("LCRQ") listed below and shall present satisfactory evidence thereof upon request of the College prior to award.
  - 1. The electrical contractor or subcontractor as applicable shall have a valid electrical license.
- B. The selected bidder/contractor or, as applicable, its subcontractors shall have and shall present satisfactory evidence of all other required LCRQ noted in the Specifications after execution of contract during the submittal process and prior to the start of the applicable work, unless otherwise requested by the College or a date or event specified for that LCRQ in the Specifications.

## **6. SUBCONTRACTORS**

- A. Pursuant to the State Colleges Contract Law, N.J.S.A. 18A:64-76.1, all bids submitted shall set forth the names and license numbers of all subcontractors to whom the bidder intends to subcontract the plumbing and gas fitting work; the refrigeration, the heating and ventilating systems and equipment; the electrical work, including any electrical power plants; tele-data, fire alarm, or security systems; the structural steel and ornamental iron work. The Subcontractor Information sheet is provided for this purpose.

## **7. CERTIFICATE OF INSURANCE**

- A. The bidder is required to submit proof of liability insurance in accordance with The College's contract.

## **8. ACCEPTANCE/REJECTION OF BIDS**

- A. Pursuant to State College Contract Law, Contracts shall be awarded to the lowest responsible bidder whose bid, conforming to the invitation for bids, will be the most advantageous to the State college.
- B. Any award made to the bidder by the College, shall bind the bidder and the bidder's heirs, executors, administrators, successors or assigns.
- C. Award of contract shall be made to the lowest responsible bidder, whose bid, conforming to the invitation for bids, is the most advantageous to the College.
- D. The award of the contract or the rejection of the bids shall be made within sixty (60) days of the date of receiving bids, unless written extensions are requested by the College and accepted by the bidder(s). All bid securities shall be returned immediately if all bids are rejected. The successful bidder(s) to whom the award is to be made will be notified by receipt of a written "Intent to Award" from the College.
- E. When award of contract is made in one fiscal year with effective date in the next fiscal year, award shall be contingent upon the availability and appropriation of sufficient funds for that purpose for the year in which said contract takes effect. When a contract shall be awarded for a period in excess of one year, said contract shall be contingent upon the annual availability and appropriation of sufficient funds for that purpose for each year of the contract term.

## **9. VENDOR RIGHT TO PROTEST-INTENT TO AWARD**

- A. Bidders have the right to protest the College's proposed award of the contractor as announced in the notice of intent to award. Unless otherwise stated, a bidder's protest must be received no later than 5-business days after the date on the notice of intent to award. Bidder's protest must be in writing and delivered to the College's Purchasing Department via email. The protests must include the specific grounds for challenging the award. Within one week of receipt of the written protest, the College's Purchasing Director shall give written notification of the College's acceptance or rejection of the protest.

## **10. WITHDRAWAL OF BIDS**

- A. A written request for the withdrawal of a bid, or any part thereof, will be granted if the request is received by the College prior to the specified time of the bid opening.



- B. Should the bidder refuse to perform the work for the price provided, they will forfeit their bid security.

## **11. BID COMPLIANCE**

- A. Bidders desiring to modify TCNJ's general conditions of the construction contract must submit the proposed modifications within the question period set forth in Section 2 or such modifications will not be considered by the College.
- B. Any bid not prepared and submitted in accordance with the provisions described herein may be rejected by the College. Any bid received after the time and date specified will not be considered. No bidder shall withdraw a bid within sixty (60) days after the date of the bid opening. Contracts shall be awarded to the lowest responsible bidder whose bid, conforming to the invitation for bids, will be the most advantageous to the State college
- C. Any bidder who has defaulted on any contract with the College or any other State Agency may be considered as not responsible and their bid may be rejected. THE COLLEGE OF NEW JERSEY reserves the right to exercise this option, as the College deems proper and/or necessary in accordance with applicable law.
- D. Bids shall include all costs of any nature necessary to complete the project in the manner and within the time required by the contract.
- E. The College reserves the right to require bidders to provide a schedule of values of their lump sum bid price upon request.
- F. The College is exempt from all taxes including Federal Excise Tax, Transportation Taxes, State Excise, Sales Tax and local taxes. Rentals of equipment for 28 days or less is not exempt from any tax under the State sales tax act.
- G. Before submitting a bid, the bidder shall be familiar with the Drawings, Specifications, and other Documents that will form part of the contract and the site conditions to confirm for themselves the character and amount of work involved.
- H. No bidder shall be allowed to offer more than one price on each item even though he/she may feel that he/she has two or more types or styles that will meet specifications. Bidders must determine for themselves which to offer. This may be cause for automatic rejection of bid.
- I. It is understood and agreed that all prices quoted are firm and not subject to any increase during the life of the contract.
- J. Should any difference arise between the contracting parties as to the meaning or intent of these instructions or specifications, the College's decision shall be final and conclusive.
- K. Should the bidder discover discrepancies in this Request for Bids, the matter shall be at once brought to the attention of the College, and the discrepancies corrected by written agreement before submission of bid. The correction will be issued by addendum.

## **12. OSHA COMPLIANCE:**

- A. The Contractor shall guarantee that all materials, supplies and equipment to be provided under his contract shall meet all applicable requirements, Specifications and standards of the Federal Occupational Safety and Health Act (OSHA) of 1970 as amended to date of acceptance by the College, and shall also apply to Contractors Construction procedures.

## **13. EXAMINATION OF SITE, DRAWINGS AND SPECIFICATIONS**

- A. Each Bidder should familiarize the site of the proposed work and fully acquaint themselves with the conditions as they exist so that they may fully understand the facilities, difficulties, and restrictions attending the execution of the work under this Contract.
- B. Bidders shall also thoroughly examine and be familiar with the Drawings and Specifications. The failure to receive or examine any form, instrument or document, or to visit the site and acquaint himself with conditions there existing shall in no way relieve any bidder from obligation with respect to his bid. By submitting a bid, the bidder agrees and warrants that he is familiarized with the site, the Drawings and Specifications and, that the Specifications and Drawings are adequate and the required result can be produced under the Drawings and Specifications. No claim for any extra will be allowed because of alleged impossibilities in the productions of the results specified or because of unintentional errors or conflicts in the Drawings and Specifications. No change orders will be issued for items, materials or issues that existed on or with respect to the site prior to bidding.



#### **14. DRAWINGS AND SPECIFICATIONS**

- A. The project shall be performed in accordance with the requirements of the Drawings and Specifications, subject to modification as provided in General Conditions. The Drawings and Specifications are intended to complement and supplement each other.
- B. Any work required by either of them and not by the other shall be performed as if denoted in both. Should any work be required which is not also denoted in the Specifications or on the Drawings because of an obvious omission, but which is, nevertheless, necessary for the proper performance of the project, such work shall be performed as fully as if it were described and delineated.

#### **15. FORM OF AGREEMENT**

- A. Every successful bidder shall be required to sign the standard form contract, a copy of which is attached. Any proposed language or form changes which in any way modifies the contractor's responsibilities as set forth in the Contract Documents will not be acceptable and will be deemed to constitute a bid exception.

#### **16. MULTIPLE BIDS NOT ALLOWED:**

- A. No bidder is allowed to submit more than one bid from an individual, firm, partnership, corporation or association under the same or different name. This will be cause for automatic rejection of each bid.

#### **17. SUBSTITUTIONS:**

- A. The bidder may include in their bid substitute materials or equipment or methods in lieu of those specified in the contract documents, but they do so at their own risk. Any substitution must be equivalent in type, function and quality to the item required in the contract. The successful bidder must submit all information required within 20 days of contract award to determine if the proposed substitute is equal to the contract requirements, and any substitution must be approved by the architect and the College.
- B. The College may investigate/evaluate/be the sole judge of the equivalency of 'or equals' products. It shall be the Contractor's responsibility to document the equivalence claim. No substitution shall result in any increase in the contract price or times. The successful bidder in its application for the substitution must certify in writing that the substitution is equal to what is specified in the contract documents in all material respects and will not increase the time or price of the contract work.
- C. Should the substitution be rejected, the contractor will then be required to provide the specified product, material or method at no additional cost to the College and no change in the project schedule.

#### **18. APPLICABLE LAWS:** The following list of statutes and regulations, which may be applicable in whole or in part, is provided for the benefit of the Contractor and is not meant to be all-inclusive. In the event that other laws are applicable, it shall be the responsibility and obligation of the Contractor to ascertain and comply with them.

- A. **SET ASIDE PROGRAM FOR SMALL BUSINESS ENTERPRISE (SBE):** It is the policy of the State entities that small business enterprises ("SBE") as determined and defined by the State of New Jersey, Division of Revenue and Enterprise Services ("Division") in the Department of the Treasury (N.J.A.C.17:13-1.2) have the opportunity to compete for and participate in the performance of contracts and subcontract for construction and for the purchase of goods and services. The State further requires that its contractors/vendors agree to take all necessary and responsible steps, in accordance with N.J.S.A. 52:32-17 et seq. and N.J.A.C. 17:13-1 et seq. to ensure that SBE's have these opportunities, as an aid in meeting the commitment of its SBE Programs. N.J.S.A. 52:32-17 et seq. and Executive Order 71 requires that each State department make a good faith effort to award a total of 25% of the dollar value of contracts for goods and services and construction to eligible small businesses.
- B. **SET ASIDE PROGRAM FOR DISABLED VETERAN-OWNED BUSINESS (DVOB):** In accordance with the New Jersey Set-Aside Act for Disabled Veterans' Businesses, N.J.S.A. 52:32-31.1 et seq. (P.L. 2015, c. 116), it is the policy of State entities that Disabled Veteran-Owned Businesses ("DVOBs"), as determined and defined by the State of New Jersey, Department of Treasury, Division of Revenue and Enterprise Services in N.J.A.C. 17:14-1.1 et seq., have the opportunity to compete for



and participate in goods and services contracts and subcontracts for construction services. The Contractor shall agree to take all necessary and responsible steps, in accordance with the aforementioned regulations, to ensure that DVOBs have these opportunities. N.J.S.A. 52:32-31.1 et seq. (P.L. 2015, c. 116) requires that each State department make a good faith effort to award a total of 3% of the dollar value of contracts for goods and services and construction to eligible DVOBs.

**C. EXECUTIVE ORDER #34 – MINORITY AND WOMEN BUSINESS ENTERPRISES:** On September 15, 2006, Governor Corzine signed Executive Order 34 establishing a Division of Minority and Women Business Development. The Division is charged with administering and monitoring policies, practices, and programs to ensure that minority and women business enterprises (MWBE) are afforded an equal opportunity to participate in New Jersey’s purchasing and procurement processes.

**D. STATEMENT OF OWNERSHIP DISCLOSURE:** Pursuant to N.J.S.A. 52:25-24.2, in the event the Bidder is a corporation, partnership or limited liability company, the Bidder must disclose their ownership. Bidder completes and submits the form along with bid proposal.

**E. NON-COLLUSION AFFIDAVIT:** Bidder completes and submits the form along with bid proposal.

**F. PREVAILING WAGE (N.J.S.A. 34:11-56.25 et seq.) AND PUBLIC WORKS CONTRACTOR REGISTRATION ACTS (N.J.S.A. 34:11-56.48 et seq.):**

1. The work described in this project is subject to the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq. and the Public Works Contractor Registration Act, N.J.S.A. 34:11-56.48 et seq.
2. The Public Works Contractor Registration Act requires the bidder and any subcontractors listed in the bid to be registered with the New Jersey Department of Labor and Workforce Development at the time the bid is submitted. The contractor must submit registration certificates for all listed subcontractors prior to award of the contract.
3. The Contractor must comply with the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 through 56.47. Workers employed by the Contractor or any subcontractor or sub-subcontractor in the performance of services directly on the project must be paid prevailing wages. Additionally, pursuant to N.J.S.A. 34:11-56.27(a), a bidder in competitive bidding for public work, whose bid is the lowest and is 10% or more lower than the next lowest bid, must certify (form to be provided by TCNJ if applicable) to TCNJ that the bidder shall pay prevailing wage rates as required by the Act. Also, as required by N.J.S.A. 34:11-56.27 and 56.28, the contract cannot become effective until the College obtains from the New Jersey Department of Labor and Workforce Development a determination of the prevailing wage rates applicable to the project as of the contract award date and attaches a copy to the contract. As required by N.J.S.A. 34:11-56.27, the Contractor or any subcontractor may be terminated if any covered worker is not paid prevailing wages on the project, and the Contractor and its surety shall be liable for any additional costs which result.
4. Please refer to <https://www.nj.gov/labor/wageandhour/prevailing-rates/public-works/currentprevailingwage.shtml> for official wage rate determinations for Mercer County, NJ.

**G. NEW JERSEY EQUAL PAY ACT:**

1. On April 24, 2018, Governor Phil Murphy signed into law New Jersey’s Diane B. Allen Equal Pay Act (N.J.S.A. 34:11-56.13 et seq.) The law provides in pertinent part that as of July 1, 2018, any employer entering into a contract with the State of New Jersey or an instrumentality of the State for “qualifying services” or “public works” must provide to the Department of Labor and Workforce Development – upon commencement of the contract – wage and demographic data for all employees who are employed in connection with the contract (for public works) and for all employees (for qualifying services). This requirement DOES NOT apply to employers who are contracting with local governments (for example: municipalities and counties). The report must contain the gender, race, ethnicity, job category, compensation, and number of hours worked by each employee.
2. The extent of the Department of Labor and Workforce Development’s responsibilities under the Equal Pay Act is the collection of data regarding compensation, hours worked, job/occupational category, job title, gender, race, and ethnicity for State contractors and making that data available to the Division on Civil Rights (DCR), within the Department of Law and Public Safety, and upon request to certain individuals. Complaints of unlawful discrimination



under the Equal Pay Act should be directed to the DCR, as should any questions regarding the filing of such a complaint.

3. The Department of Labor and Workforce Development requires, by the law, the Payroll Certification for Public Works Projects form to be completed by employers. This form should be used to report the employee's wage and demographic data and can be found on the LWD website (<https://www.nj.gov/labor/wageandhour/tools-resources/equal-pay>). **Upon commencement of the contract, submit the form via the NJ Wage Hub** ([njwages.nj.gov](https://njwages.nj.gov)). **IMPORTANT:** For purposes of law, you must also submit this form to the College, either via the NJ Wage Hub or other methods.

**H. N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27-1 et seq., AFFIRMATIVE ACTION:** The bidder is required to complete and submit a copy of Initial Project Workforce Report (AA-201) to the College and the New Jersey Department of Labor & Workforce Development Construction EEO Compliance Monitoring Unit verifying that the bidder is operating under a federally approved or sanctioned Affirmative Action program after notification of award, prior to signing of the contract. The bidder also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to The College and the Department.

**I. New Jersey Business Registration Certificate, N.J.S.A. 52:32-44:**

1. Pursuant to - N.J.S.A. 52:32-44, The College of New Jersey ("Contracting Agency") is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.
2. Prior to contract award or authorization, the contractor shall provide the Contracting Agency with its proof of business registration and that of any named subcontractor(s).
3. Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the Contracting Agency prior to the time a contract, purchase order, or other contracting document is awarded or authorized.
4. During the course of contract performance:
  - (a) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.
  - (b) the contractor shall maintain and submit to the Contracting Agency a list of subcontractors and their addresses that may be updated from time to time.
  - (c) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at <http://www.state.nj.us/treasury/revenue/busregcert.shtml>.
5. Before final payment is made under the contract, the contractor shall submit to the Contracting Agency a complete and accurate list of all subcontractors used and their addresses.
6. Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

**J. RECORD RETENTION:** Pursuant to N.J.A.C. 17:44-2.2, the vendor shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

**K. ENERGY STAR ENERGY EFFICIENT PRODUCTS:** Under Executive Order #11 (Corzine), the College is required to select ENERGY STAR energy-efficient products when acquiring new energy-using products or replacing existing equipment. For products that do not have ENERGY STAR labels, vendors shall follow guidelines established by the New Jersey Clean Energy Program.

**L.** The following list of statutes and regulations, which may be applicable in whole or in part, is provided for the benefit of the Contractor and is not meant to be all-inclusive. In the event that



other laws are applicable, it shall be the responsibility and obligation of the Contractor to ascertain and comply with them.

1. Federal Statutes:

Civil Rights Act of 1964 – 42 U.S.C.A. Section 1971 *et seq.*

The Americans with Disabilities Act of 1990



## GENERAL AGREEMENT

1. Having examined the plans and specifications with related documents and the site of the proposed work and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, the undersigned hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the price stated. This price covers all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.
2. Bidder acknowledges receipt of the following Addendums/Clarifications:  
  
No Addenda Issued \_\_\_\_\_  
Addendum Number \_\_\_\_\_ Date \_\_\_\_\_  
Addendum Number \_\_\_\_\_ Date \_\_\_\_\_  
Addendum Number \_\_\_\_\_ Date \_\_\_\_\_
3. Bidder acknowledges and affirms that he/she has personal knowledge of or has obtained and reviewed a copy of the valid prevailing wage rates at the time of the bid and for the duration of the contract for all trades involved in the project for the geographical location of the project as issued by the Commissioner of the Department of Labor & Workforce Development, Trenton, NJ 08625 (609) 292-2259 or visiting the Department of Labor website at (<https://www.nj.gov/labor/wageandhour/prevailing-rates/public-works/currentprevailingwage.shtml>). All pre-determined rate increases listed at the time the contract is awarded must also be paid, beginning on the dates specified. Select Mercer for the applicable prevailing wage rates.
4. Bidder agrees that its price is good and the bid shall not be withdrawn for a period of 60 calendar days after the scheduled Bid Due Date and Time.
5. The attached bid security is to become the Property of the Owner in the event that the Contract and bond are not executed within the time set forth, as liquidated damages for the delay and additional expense (including the difference between the price provided with said bond and the next lowest responsive bidder) to the Owner caused thereby.
6. Upon conclusion of the 5-business day protest period, Bidder will execute the formal contract for the stated work and compensation on the Standard Form of Agreement Between Owner and Contractor within 5 business days and deliver as required in the General Conditions: a Performance and Payment Bond; Surety Disclosure and Certification Statement; and certificates of insurance for general liability, automobile and worker's compensation. Contractor shall provide a Maintenance Bond at job completion for a period of one year for 100% of the final contract price.
7. Bidder acknowledges work to commence on site not later than ten (10) calendar days after receipt of a Notice to Proceed.

(Seal if bid is by Corporation)

Respectfully submitted,

\_\_\_\_\_  
(Signature of Principal)

\_\_\_\_\_  
(Printed Name of Principal)

\_\_\_\_\_  
(Title of Principal)



**COST SHEET  
SINGLE BID (LUMP SUM):  
BASE BID, ALTERNATE PROPOSALS, AND UNIT PRICES**

To: **The College of New Jersey**

for: **REBID Roscoe West Hall Lower Level AV Project**

Date \_\_\_\_\_

**A. BID:**

1. **Base:** We, \_\_\_\_\_, the Undersigned, in accordance with the published advertisement inviting proposals, will furnish all labor, material, equipment and services necessary for the complete construction, as defined in the advertisement, specimen contract, specifications, addendums/clarifications/bulletins, drawings, and proposal, for the Contract amount indicated below for the **above noted project** in strict accordance with the Contract Documents and Addenda thereto for the total sum of:

**PROJECT GRAND TOTAL – INCLUSIVE ONE YEAR WARRANTY (AS SPECIFIED ON THE EXCEL SUMMARY PAGE)**

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
(words)

**ALL BIDDERS MUST COMPLETE THE PRICING SHEET USING THE EXCEL DOCUMENT. A COPY OF THE SHEET MUST BE SUBMITTED WITH YOUR BID. VENDOR'S SHOULD SUBMIT ONE (1) HARD COPY OF THEIR PROPOSAL AND ONE (1) DIGITAL COPY (FLASH DRIVE) OF THEIR PROPOSAL.**

**General Construction (Single overall Prime Contract)**

2. **Add /Deduct Alternate: NONE**

3. **Check List for Bidders:** A check list has been provided in these specifications for the use in completing this proposal. Bidders are encouraged to reference said list to minimize the opportunity for errors by the bidder.

**B. STATEMENT:**

We, the Undersigned, acting through its authorized officers and intending to be legally bound, agree that this bid proposal shall constitute an offer by the Undersigned to enter into a Contract with the acts and things therein provided and accept this offer at any time during said period by notifying the Undersigned of the acceptance of said offer.

Dated \_\_\_\_\_

Firm Name \_\_\_\_\_

Phone Number \_\_\_\_\_

Address \_\_\_\_\_



\_\_\_\_\_

\*\*If a corporation, give the State of Incorporation, using the phrase:

"A corporation organized under the laws of \_\_\_\_\_."

If a partnership, give names of the partners, using also the phrase:

"Co-partners trading and doing business under the firm name and style of \_\_\_\_\_."

If a Limited Liability Company, give the names of the owners/members, using also the phrase:

"A owner/member doing business under the firm name and style of \_\_\_\_\_."

If an individual using a trade name, give individual name, also using the phrase:

"An individual doing business under the firm name and style of \_\_\_\_\_."

Dated: \_\_\_\_\_

STATE OF \_\_\_\_\_

SS.

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being duly sworn say that the several matters stated in this proposal are in all respects true, and that no member of the State or employee of the College are interested in any way in this proposal.

Sworn and subscribed before me \_\_\_\_\_

Bidder signs above line

this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
and

\_\_\_\_\_  
Title



## **SUBCONTRACTOR INFORMATION FOR SINGLE BID (LUMP SUM)**

Pursuant to the State Colleges Contract Law, N.J.S.A. 18A:64-76.1, all bids submitted shall set forth the names and license numbers of all subcontractors to whom the bidder intends to subcontract the plumbing and gas fitting work; the refrigeration, the heating and ventilating systems and equipment; the electrical work, including any electrical power plants; tele-data, fire alarm, or security systems; the structural steel and ornamental iron work (individually, the “Trade” or collectively, the “Trades”).

For each Trade listed below for which the work will be completed by a

- Subcontractor - you must list for each such subcontractor the name, license number (or in lieu thereof enclose a copy of the license with this form), address, and telephone number.
- Self-performed – you must list the name of the bidder (next to “Name”) and license number.
- Not required - if that Trade is not required per the scope of work of the project, indicate that by inserting “Not required” (next to “Name”).

**Failure to complete this form as required may result in your bid being disqualified.**

### **Plumbing and Gas Fitting Work**

**Must complete information for License Holder (Self-performed or Subcontractor):**

Name: \_\_\_\_\_  
License Number: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_

### **Refrigeration, Heating and Ventilating Systems and Equipment**

**Must complete information for License Holder (Self-performed or Subcontractor):**

Name: \_\_\_\_\_  
License Number: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_



**Electrical Work, including any Electrical Power Plants, Tele-data, Fire Alarm, or Security Systems**

**REQUIRED FOR THIS PROJECT**

**Must complete information for License Holder (Self-performed or Subcontractor):**

Name: \_\_\_\_\_

License Number: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

**Structural Steel Work and Ornamental Iron Work**

**Must complete information if required (Self-Performed or Subcontractor):**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

\_\_\_\_\_  
Bidder Name

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name of Signing Individual

\_\_\_\_\_  
Date



## DEMOGRAPHIC INFORMATION

Under Executive Order 34 (Corzine), the College is responsible for soliciting demographic information from its vendors. The College is required to seek the following information from each firm under contract with the College:

1. Is more than fifty percent (50%) of your company minority owned? (circle one) YES NO  
(African-American, Hispanic, Asian, and/or Native American)
2. Is more than fifty percent (50%) of your company woman owned? (circle one) YES NO
3. What is the ethnicity of the owner of your company: (check applicable according to 51% ownership)
  - ☐ Asian American
  - ☐ Multiple Ethnicities
  - ☐ Non-Minority
  - ☐ Hispanic American
  - ☐ African American
  - ☐ Caucasian American Female
  - ☐ Native American
  - ☐ Unspecified

The College is required to solicit the foregoing information. Your response, however, is **strictly voluntary**. Please be advised that any contracting decisions made by the College will **not** be influenced in any way by your decision to provide the above information.

\_\_\_\_\_  
Bidder Name

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name of Signing Individual

\_\_\_\_\_  
Date



<b>SMALL BUSINESS, MINORITY AND/OR WOMEN, VETERAN AND DISABLED VETERAN OWNED BUSINESS REPORTING</b>
---

1. Contractor and sub-contractors are requested to check all of the following that apply to their company and, if applicable, submit a copy of their certificate(s):

A. My company is certified by the NJ Department of Treasury, Division of Revenue and Enterprise Services as a:

- ☐ Small Business Enterprise, SBE
- ☐ Minority-owned Business Enterprise, MBE
- ☐ Women-owned Business Enterprise, WBE
- ☐ Veteran-owned Business, VOB
- ☐ Disabled Veteran-owned Business, DVOB

B. My company is not certified by either NJ Department, but is:

- ☐ Small Business, SBE
- ☐ Minority-owned Business, MBE
- ☐ Women-owned Business, WBE
- ☐ Veteran-owned Business, VOB
- ☐ Disabled Veteran-owned Business, DVOB

C. ☐ My company is not certified as one of the categories listed above.

\_\_\_\_\_  
Bidder Name

By: \_\_\_\_\_

Signature

\_\_\_\_\_  
Printed Name of Signing Individual

\_\_\_\_\_  
Date





**PERFORMANCE BOND & PAYMENT BOND**

BOND NO. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned \_\_\_\_\_  
\_\_\_\_\_ as Principal, and \_\_\_\_\_, a  
corporation of the State of \_\_\_\_\_, duly authorized to do business in the State of New  
Jersey, having an office at \_\_\_\_\_, are hereby held and  
firmly bound unto The College of New Jersey in the Penal Sum of  
\_\_\_\_\_ DOLLARS, for payment of which  
well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators,  
successors and assigns.

SIGNED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, the above named Principal  
did on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, enter into a written contract with The College  
of New Jersey for \_\_\_\_\_ which said contract is made a part  
of this bond as set forth herein;

NOW, if the said \_\_\_\_\_ shall well and faithfully  
do and perform the things agreed by \_\_\_\_\_ to be done and performed according to the  
terms of the said contract; shall pay all lawful claims of sub-contractors, materialmen, laborers, persons, forms of  
other suppliers or teams. fuel, oils, implements or machinery furnished, used or consumed in the carrying forward,  
performing, or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit  
of any subcontractor, materialman, laborer, person, firm or corporation having a just claim, as well as for the  
obligee herein; then this obligation shall be void, otherwise the same shall remain in full force and effect; it being  
expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event  
exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulated and agrees that no modifications, omissions, or additions in or to the terms of  
the said contract, or in or to the plans and specifications therefore shall in any wise effect the obligation of said  
surety on its bond.

This bond is given in compliance with the requirements of the statutes of the State of New Jersey including  
N.J.S.A. 18A:64-68 and any amendments thereof.

SIGNED, SEALED AND DELIVERED  
IN THE PRESENCE OF

\_\_\_\_\_  
Witness

BY: \_\_\_\_\_

\_\_\_\_\_  
Witness as to Surety

BY: \_\_\_\_\_  
ATTORNEY-IN-FACT

Countersigned

this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

BY: \_\_\_\_\_

NOTE: General Power of Attorney and the current  
financial statement of the bonding company  
must be attached to each copy (a total of three)  
of the Performance Bond.



## SURETY DISCLOSURE STATEMENT AND CERTIFICATION

\_\_\_\_\_, surety(ies) on the attached bond, hereby certifies(y) the following:

- (1) The surety meets the applicable capital and surplus requirements of R.S. 17:17-6 or R.S. 17:17-7 as of the surety's most current annual filing with the New Jersey Department of Insurance.
- (2) The capital (where applicable) and surplus, as determined in accordance with the applicable laws of the State of New Jersey, of the surety(ies) participating in the issuance of the attached bond is (are) in the following amount(s) as of the calendar year ending December 31, \_\_\_\_, (insert most recent calendar year for which capital and surplus amounts are available), which amounts have been certified as indicated by certified public accountants (indicating separately for each surety that surety's capital and surplus amounts, together with the name and address of the firm of certified public accountants that shall have certified those amounts):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (3) (a) With respect to each surety participating in the issuance of the attached bond that has received from the United States Secretary of the Treasury a certificate of authority pursuant to 31 U.S.C. 9305, the underwriting limitation established therein and the date as of which that limitation was effective is as follows (indicating for each surety that surety's underwriting limitation and the effective date thereof):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (b) With respect to each surety participating in the issuance of the attached bond that has not received such a certificate of authority from the United States Secretary of the Treasury, the underwriting limitation of that surety as established pursuant to R.S. 17:18-9 as of date on which such limitation was so established, is as follows (indicating for each such surety that surety's underwriting limitation and the date on which that limitation was established):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (4) The amount of the bond to which this statement and certification is attached is \$\_\_\_\_\_.
- (5) If, by virtue of one or more contracts of reinsurance, the amount of the bond indicated under item (4) above exceeds the total underwriting limitation of all sureties on the bond as set forth in items (3) (a) or (3) (b) above, or both, then for each such contract of reinsurance:

- (a) The name and address of each such re-insurer under that contract and the amount of that re-insurer's participation in the contract is as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (b) Each surety that is party to any such contract of reinsurance certifies that each reinsurer listed under item (5) (a) satisfies the credit for reinsurance requirement established under P.L. 1993, c. 243 (C. 17:51B-1 *et seq.*) and any applicable regulations in effect as of the date on which the bond to which this statement certification is attached shall have been filed with the appropriate public agency.



## CERTIFICATION

(to be completed by an authorized certifying agent for each surety on the bond)

I, \_\_\_\_\_ (name of agent), as \_\_\_\_\_ (title of agent)

for \_\_\_\_\_ (name of surety),

a corporation/mutual insurance company/other (indicate type of business organization by circling one) domiciled in \_\_\_\_\_  
\_\_\_\_\_ (state of domicile), DO HEREBY CERTIFY that, to the best of my knowledge, the foregoing statements made by  
me are true, and ACKNOWLEDGE that, if any of those statements are false, this bond is VOID and I am subject to  
punishment.

\_\_\_\_\_  
(Signature of certifying agent)

\_\_\_\_\_  
(Printed name of certifying agent)

\_\_\_\_\_  
(Title of certifying agent)

\_\_\_\_\_  
(Date of Certification)





# Mandatory Documents

FORM #	TITLE OF FORM
1	MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
2	OWNERSHIP DISCLOSURE FORM
3	NON-COLLUSION STATEMENT
4	VENDOR QUALIFICATION SHEET
5	NON-INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS FORM
6	DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN FORM
7	FEDERAL NON-DEBARMENT CERTIFICATION





**MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE**  
**N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)**  
**N.J.A.C. 17:27-1.1 et seq.**  
**FORM # 1**

The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

**CONSTRUCTION CONTRACTS**

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers



(Cont)

provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active “card carrying” members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;



(Cont)

- (4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
- (5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
- (6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:
  - (i) The contractor or subcontractor shall interview the referred minority or women worker.
  - (ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.
  - (iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
  - (iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.
- (7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.



*(Cont)*

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.



## **Additional Mandatory Construction Contract Language For State Agencies, Independent Authorities, Colleges and Universities Only**

The Executive Order No. 151 (Corzine, August 28, 2009) and P.L. 2009, Chapter 335 include a provision which require all state agencies, independent authorities and colleges and universities to include additional mandatory equal employment and affirmative action language in its construction contracts. It is important to note that this language is in addition to and does not re- place the mandatory contract language and good faith efforts requirements for construction con- tracts required by N.J.A.C. 17:27-3.6, 3.7 and 3.8. The additional mandatory equal employment and affirmative action language is as follows:

It is the policy of The College of New Jersey that its contracts should create a work- force that reflects the diversity of the State of New Jersey. Therefore, contractors engaged by The College of New Jersey to perform under a construction contract shall put forth a good faith effort to engage in recruitment and employment practices that further the goal of fostering equal opportunities to minorities and women.

The contractor must demonstrate to The College of New Jersey's satisfaction that a good faith effort was made to ensure that minorities and women have been afforded equal opportunity to gain employment under The College of New Jersey's contract with the contractor. Payment may be withheld from a contractor's con- tract for failure to comply with these provisions.

Evidence of a "good faith effort" includes, but is not limited to:

1. The Contractor shall recruit prospective employees through the State Job bank website, managed by the Department of Labor and Workforce Development, available online at <http://NJ.gov/JobCentralNJ>;
2. The Contractor shall keep specific records of its efforts, including records of all individuals interviewed and hired, including the specific numbers of minorities and women;
3. The Contractor shall actively solicit and shall provide The College of New Jersey with proof of solicitations for employment, including but not limited to advertisements in general circulation media, professional service publications and electronic media; and
4. The Contractor shall provide evidence of efforts described at 2 above to The College of New Jersey no less frequently than once every 12 months.
5. The Contractor shall comply with the requirements set forth at N.J.A.C. 17:27-1.1 et seq.

To ensure successful implementation of the Executive Order and Law, state agencies, independent authorities and colleges and universities must forward an Initial Project Workforce Report (AA 201) for any projects funded with ARRA money to the Dept. of LWD, Construction EEO Monitoring Program immediately upon notification of award but prior to execution of the contract.

**IF AWARDED A CONTRACT YOUR COMPANY/FIRM WILL BE REQUIRED TO COMPLY WITH THE AFFIRMATIVE ACTION REQUIREMENTS LISTED ABOVE.**

Firm Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





# OWNERSHIP DISCLOSURE FORM # 2

The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

BID SOLICITATION # AND TITLE: \_\_\_\_\_

VENDOR NAME: \_\_\_\_\_

PURSUANT TO N.J.S.A. 52:25-24.2, ALL PARTIES ENTERING INTO A CONTRACT WITH THE STATE ARE REQUIRED TO PROVIDE A STATEMENT OF OWNERSHIP.

1. The vendor is a **Non-Profit Entity**; and therefore, no disclosure is necessary.
2. The vendor is a **Sole Proprietor**; and therefore, no other disclosure is necessary.  
A Sole Proprietor is a person who owns an unincorporated business by himself or her-self.  
A limited liability company with a single member is not a Sole Proprietor.
3. The vendor is a **corporation, partnership, or limited liability company**; and therefore, disclosure is necessary.

If you answered **YES** to Question 3, you must disclose the following information below: **(a)** the names and addresses of all stockholders in the corporation who own 10% or more of its stock, of any class; **(b)** all individual partners in the partnership who own a 10% or greater interest therein; or, **(c)** all members in the limited liability company who own a 10% or greater interest therein.\*

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

4. For each of the corporations, partnerships, or limited liability companies identified in response to Question #3 above, are there any individuals, partners, members, stockholders, corporations, partnerships, or limited liability companies owning a 10% or greater interest of those listed business entities?

If you answered **YES** to Question 4, you must disclose the following information below: **(a)** the names and addresses of all stockholders in the corporation who own 10% or more of its stock, of any class; **(b)** all individual partners in the partnership who own a 10% or greater interest therein; or, **(c)** all members in the limited liability company who own a 10% or greater interest therein. The disclosure(s) shall be continued until the names and addresses of every non-corporate stockholder, individual partner, and/or member a 10% or greater interest has been identified.\*

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

NAME			
ADDRESS			
ADDRESS			
CITY	STATE	ZIP	

5. As an alternative to completing this form, a Vendor with any direct or indirect parent entity which is publicly traded, may submit the name and address of each publicly traded entity and the name and address of each person that holds a 10% or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission or the foreign equivalent, and, if there is any person that holds a 10% or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal Securities and Exchange Commission or the foreign equivalent and the relevant page numbers of the filings that contain the information on each person that holds a 10% or greater beneficial interest.\*


\* Attach additional sheets if necessary





**NON-COLLUSION STATEMENT  
FORM # 3**

The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

Date:

\_\_\_\_\_  
The College of New Jersey  
The Office of Finance & Business Services, Purchasing Department  
Administrative Services Building, Room 201  
P.O. Box 7718  
Ewing, New Jersey 08628-0718  
To Whom It May Concern:

This is to certify that the undersigned bidder \_\_\_\_\_ as  
not, either directly or indirectly, entered into any agreement, participated in  
any collusion, or otherwise taken any action in restraint of free competitive  
bidding in connection with the proposal submitted to The College of New  
Jersey on the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
Signature:

\_\_\_\_\_  
Corporate Seal:

Attest by:

\_\_\_\_\_  
Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

My commission Expires: \_\_\_\_\_

Notary Public

**THIS STATEMENT MUST BE COMPLETED AND SIGNED**





**TCNJ**

THE COLLEGE OF NEW JERSEY

## VENDOR QUALIFICATION SHEET

### FORM # 4

The College of New Jersey

PO Box 7718

Ewing, NJ 08628-0718

Vendors are required to submit evidence of qualifications to meet all requirements as required by the Office of Finance & Business Services at The College of New Jersey by providing the information listed below. Vendors must comply with the College's terms and conditions available on the [Purchasing website](#).

If this information is being requested as part of an RFP or RFQ, vendors may be requested to furnish additional information for clarification purposes. This will in no way change the vendor's original proposal.

All vendors are encouraged to register with the State of New Jersey, Division of Purchase and Property via [NJSTART](#).

### TO BE COMPLETED BY VENDOR

1. Please list the types of commodities that your company can provide.

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

2. The number of years your firm has been providing these services. \_\_\_\_\_ Year(s)

3. Location of vendor's office and personnel that will be responsible for managing contract/service:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Federal Identification Number: \_\_\_\_\_

4. Does your firm have a New Jersey Business Registration Certificate? Yes ☐ No ☐  
If you would like to register, visit the State website [here](#), the NJ BRC is required prior to award.



### **VENDOR QUALIFICATIONS- continued**

Under NJ Executive Order 34, TCNJ is responsible for soliciting demographic, ethnic, and gender information from its vendors. Your response, however, is **strictly voluntary**. Please be advised that any contracting decisions made by TCNJ will **not** be influenced in any way by your decision to provide the above information. TCNJ is required to seek the following information from each firm under contract with us:

1. Is more than fifty percent (50%) of your company minority owned (African-American, Hispanic, Asian, and/or Native American) Yes ☐ No ☐
2. Is more than fifty percent (50%) of your company woman owned? Yes ☐ No ☐
3. What is the ethnicity of the owner of your company: (check applicable according to 51% ownership)

- ☐ Asian American
- ☐ Multiple Ethnicities
- ☐ Non-Minority
- ☐ Hispanic American
- ☐ African American
- ☐ Caucasian American Female
- ☐ Native American
- ☐ Unspecified

11. Please provide a list of former or present clients. Also, indicate the name of a contact person and telephone number for reference purposes. **Any personnel from The College of New Jersey listed as a reference will not be considered a valid reference.**

A. Client Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

B. Client Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

C. Client Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_



**VENDOR QUALIFICATIONS- continued**

12. Please answer the questions below related to your prior experience. If any of the responses are yes, attach a summary of details on a separate sheet.

Has the bidder:

- a. been found, through either court adjudication, arbitration, mediation, or other contractually stipulated alternate dispute resolution mechanism, to have: failed to provide or perform goods or services; or failed to complete the contract in a timely manner; or otherwise performed unsatisfactorily under a prior contract with the contracting unit? Yes ☐ No ☐
- b. defaulted on a contract, thereby requiring the local unit to utilize the services of another contractor to provide the goods or perform the services or to correct or complete the contract or requiring the local unit to look to the bidder's surety for completion of the contract or tender of the costs of completion? Yes ☐ No ☐
- c. been debarred or suspended from contracting with any of the agencies or departments of the executive branch of the State of New Jersey at the time of contract award, whether or not the action was based on experience with the contracting unit. Yes ☐ No ☐

Firm Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





# CERTIFICATION OF NON INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS FORM # 5

The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

Pursuant to N.J.S.A. 52:32-60.1, et seq. ([L. 2022, c. 3](#)) any person or entity (hereinafter "Vendor") that seeks to enter into or renew a contract with a State agency for the provision of goods or services, or the purchase of bonds or other obligations, must complete the certification below indicating whether or not the Vendor is identified on the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, available here: <https://sanctionssearch.ofac.treas.gov/>. If the Department of the Treasury finds that a Vendor has made a certification in violation of the law, it shall take any action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

I, the undersigned, certify that I have read the definition of "Vendor" below, and have reviewed the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, and having done so certify:

*(Check the Appropriate Box)*

- A. That the Vendor is not identified on the [OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus](#).

**OR**

- B. That I am unable to certify as to "A" above, because the Vendor is identified on the [OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus](#).

**OR**

- C. That I am unable to certify as to "A" above, because the Vendor is identified on the [OFAC Specially Designated Nationals and Blocked Persons list](#). However, the Vendor is engaged in activity related to Russia and/or Belarus consistent with federal law, regulation, license or exemption. A detailed description of how the Vendor's activity related to Russia and/or Belarus is consistent with federal law is set forth below.

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*(Attach Additional Sheets If Necessary.)*

Signature of Vendor's Authorized Representative	Date
Print Name and Title of Vendor's Authorized Representative	Vendor's FEIN
Vendor's Name	Vendor's Phone Number
Vendor's Address (Street Address)	Vendor's Fax Number
Vendor's Address (City/State/Zip Code)	Vendor's Email Address

<sup>i</sup> Vendor means: (1) A natural person, corporation, company, limited partnership, limited liability partnership, limited liability company, business association, sole proprietorship, joint venture, partnership, society, trust, or any other nongovernmental entity, organization, or group; (2) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in Section 1701(c)(3) of the International Financial Institutions Act, 22 U.S.C. 262r(c)(3); or (3) Any parent, successor, subunit, direct or indirect subsidiary, or any entity under common ownership or control with, any entity described in paragraph (1) or (2).





DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

FORM # 6

The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

BID SOLICITATION # AND TITLE: \_\_\_\_\_

VENDOR NAME: \_\_\_\_\_

Pursuant to N.J.S.A. 52:32-57, et seq. (P.L. 2012, c.25 and P.L. 2021, c.4) any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must certify that neither the person nor entity, nor any of its parents, subsidiaries, or affiliates, is identified on the New Jersey Department of the Treasury's Chapter 25 List as a person or entity engaged in investment activities in Iran. The Chapter 25 list is found on the Division's website at <https://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Vendors/Bidders must review this list prior to completing the below certification. If the Director of the Division of Purchase and Property finds a person or entity to be in violation of the law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

**CHECK THE APPROPRIATE BOX**

☐ I certify, pursuant to N.J.S.A. 52:32-57, et seq. (P.L. 2012, c.25 and P.L. 2021, c.4), that neither the Vendor/Bidder listed above nor any of its parents, subsidiaries, or affiliates is listed on the New Jersey Department of the Treasury's Chapter 25 List of entities determined to be engaged in prohibited activities in Iran.

**OR**

☐ I am unable to certify as above because the Vendor/Bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the New Jersey Department of the Treasury's Chapter 25 List. I will provide a detailed, accurate and precise description of the activities of the Vendor/Bidder, or one of its parents, subsidiaries or affiliates, has engaged in regarding investment activities in Iran by completing the information requested below.

Entity Engaged in Investment Activities  
Relationship to Vendor/ Bidder  
Description of Activities

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Duration of Engagement  
Anticipated Cessation Date

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*\*Attach Additional Sheets If Necessary.*

**CERTIFICATION**

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Vendor, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the State of New Jersey is relying on the information contained herein, and that the Vendor is under a continuing obligation from the date of this certification through the completion of any contract(s) with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I may be subject to criminal prosecution under the law, and it will constitute a material breach of my contract(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name and Title





**FEDERAL NON-DEBARMENT CERTIFICATION**  
**N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)**  
**FORM # 7**

**The College of New Jersey**  
**PO Box 7718**  
**Ewing, NJ 08628-0718**

**Summary of the Certification Requirements under N.J.S.A. 52:32-44.1**

Pursuant to state law any natural person, company, firm, association, corporation, or other entity prohibited, or “debarred,” from contracting with the federal government agencies, shall also be prohibited from contracting for public work in the state of New Jersey. This prohibition also extends to any affiliate organization(s) held by or subject to the control of an entity of that prohibited person or entity.

Prior to awarding a contract for public work a local unit must obtain written certification from the contracting person or entity through the form below, attesting to their non-debarment from contracting with federal government agencies. Contracting units are reminded that they must fill-in the boilerplate information in the certification sections of Parts II through IV regarding their name and type of contracting unit before using the form.



**CERTIFICATION OF NON-DEBARMENT**  
**FOR FEDERAL GOVERNMENT CONTRACTS**  
N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

This certification shall be completed, certified to, and submitted to the contracting unit prior to contract award, except for emergency contracts where submission is required prior to payment.

<b>PART I: VENDOR INFORMATION</b>	
Individual or Organization Name	
Physical Address of Individual or Organization	
Unique Entity ID (if applicable)	
CAGE/NCAGE Code (if applicable)	
<b>Check the box that represents the type of business organization:</b>	

- ☐ Sole Proprietorship (skip Parts III and IV)   ☐ Non-Profit Corporation (skip Parts III and IV)
- ☐ For-Profit Corporation (any type)   ☐ Limited Liability Company (LLC)   ☐ Partnership
- ☐ Limited Partnership   ☐ Limited Liability Partnership (LLP)
- ☐ Other (be specific): \_\_\_\_\_

<b>PART II – CERTIFICATION OF NON-DEBARMENT: Individual or Organization</b>			
I hereby certify that the <b>individual or organization listed above in Part I</b> is not debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that The College of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by The College of New Jersey to notify The College of New Jersey in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with The College of New Jersey, permitting The College of New Jersey to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	



PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning Greater than 50 Percent of Organization	
<b>Section A (Check the Box that applies)</b>	
<input type="checkbox"/>	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.
<b>Name of Individual or Organization</b>	
<b>Physical Address</b>	
<b>OR</b>	
<input type="checkbox"/>	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.
<b>Section B (Skip if no Business entity is listed in Section A above)</b>	
<input type="checkbox"/>	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization's parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization's parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization's parent entity, as the case may be.
<b>Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity</b>	
<b>Physical Address</b>	
<b>OR</b>	
<input type="checkbox"/>	No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.
<b>Section C – Part III Certification</b>	
I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the <b>Organization listed above in Part I</b> or, if applicable, owns greater than 50 percent of a parent entity of _____.	



I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that The College of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award \_\_\_\_\_ to notify The College of New Jersey in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with The College of New Jersey, permitting The College of New Jersey to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

#### Part IV – CERTIFICATION OF NON-DEBARMENT: Contractor – Controlled Entities

##### Section A

<input type="checkbox"/>	Below is the name and address of the corporation(s) in which the <b>Organization listed in Part I</b> owns more than 50 percent of voting stock, or of the partnership(s) in which the <b>Organization listed in Part I</b> owns more than 50 percent interest therein, or of the limited liability company or companies in which the <b>Organization listed above in Part I</b> owns more than 50 percent interest therein, as the case may be.
Name of Business Entity	Physical Address

\*\*Add additional sheets if necessary\*\*

OR

<input type="checkbox"/>	The <b>Organization listed above in Part I</b> does not own greater than 50 percent of the voting stock in any corporation and does not own greater than 50 percent interest in any partnership or any limited liability company.
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##### Section B (skip if no business entities are listed in Section A of Part IV)

<input type="checkbox"/>	Below are the names and addresses of any entities in which an entity listed in Part III A owns greater than 50 percent of the voting stock (corporation) or owns greater than 50 percent interest (partnership or limited liability company).
Name of Business Entity Controlled by Entity Listed in Section A of Part IV	Physical Address



**Add additional Sheets if necessary**			
<b>OR</b>			
<input type="checkbox"/>	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.		
<b>Section C – Part IV Certification</b>			
<p>           I hereby certify that the <b>Organization listed above in Part I</b> does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that The College of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by The College of New Jersey to notify The College of New Jersey in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with The College of New Jersey, permitting The College of New Jersey to declare any contract(s) resulting from this certification void and unenforceable.         </p>			
Full Name (Print):		Title:	
Signature:		Date:	





## CONTRACT FOR CONSTRUCTION

This AGREEMENT is entered into as of the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, between

The College:           The College of New Jersey (“TCNJ” or the “College”)  
                              PO Box 7718  
                              2000 Pennington Road  
                              Ewing, New Jersey 08628-0718

and

the Contractor:       \_\_\_\_\_ (the “Contractor”)

in connection with   \_\_\_\_\_

the Project:           [ \_\_\_\_\_ ] (the “Project”)

The Architect:       \_\_\_\_\_  
                              \_\_\_\_\_  
                              \_\_\_\_\_

### **ARTICLE 1**

#### **EMPLOYMENT OF THE CONTRACTOR/THE PROJECT DESCRIPTION**

**1.1**     The College employs the Contractor and the Contractor agrees to perform the construction for the Project identified above. The Project is described in more detail in the College’s Plans and Specifications prepared by the Architect.

### **ARTICLE 2**

#### **THE CONTRACT DOCUMENTS**

**2.1**     The Contract Documents consist of this Contract for Construction and the Exhibits attached hereto (“Contract for Construction”), the General Conditions of the Contract for Construction (the “General Conditions”) (and any other General, Supplementary and other Conditions), the Plans and Specifications, and also the following documents:



- (a) The Contractor's Bid excluding limitations and qualifications unless such limitation or qualification is specifically accepted in writing by the College;
- (c) Addenda and Clarifications issued before the bid due date;
- (d) The Project Bidding Schedule; and
- (e) Modifications issued after execution of this Contract for Construction.

These documents all form the "Contract," and are as fully a part of this Contract as if attached hereto or repeated herein. This Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral.

### **ARTICLE 3**

#### **SCOPE OF WORK**

**3.1** The Contractor shall fully perform the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. The Contractor shall assume full responsibility for constructing and completing the Project and all the Work, including providing all labor, Subcontractors, materials, equipment, and services reasonably inferable from the Contract Documents and all applicable laws, codes and professional standards, and providing all supervision, management, and scheduling required in the General Conditions and as noted throughout the Contract Documents.

### **ARTICLE 4**

#### **CONTRACT TIMES**

**4.1 TIME OF THE ESSENCE.** All dates and durations specified in this Contract, including the Construction Start Date(s), any Milestones Dates, any Substantial Completion Date(s) and any Final Completion Date(s) (collectively, "Contract Times") are agreed to be of the essence.

**4.2 CONSTRUCTION START.** The Work shall start no later than ten (10) calendar days after the College issues a Notice to Proceed to the Contractor ("Construction Start Date"). If the Work is to be performed in phases, the College may issue a separate Notice to Proceed with respect to each phase (e.g., Phase 1 Notice to Proceed, Phase 2 Notice to Proceed, etc.) thereby establishing different Construction Start Dates for each phase (e.g., Phase 1 Construction Start Date, Phase 2 Construction Start Date, etc.). The College may, in its sole discretion and at no cost to the College, choose to delay the issuance of a Notice to Proceed and the Construction Start Date for any phase until after the Contractor has achieved Substantial or Final Completion of any other phase.

**4.3 MILESTONES.** The construction tasks or activities shall be completed within the number of calendar days after the Construction Start Date as set forth in the Notice to Proceed ("Milestone Dates"). If the Work is to be performed in phases, each phase may have



separate Milestone Dates (e.g., Phase 1 Milestone Dates, Phase 2 Milestone Dates, etc.), which dates shall be set forth in the Notice to Proceed for that phase.

**4.4 SUBSTANTIAL COMPLETION.** The Contractor shall diligently prosecute the Work and shall achieve Substantial Completion of the entire Work as set forth in the Notice to Proceed (“Substantial Completion Date”). If the Work is to be performed in phases, each phase may have a separate Substantial Completion Date (e.g., Phase 1 Substantial Completion Date, Phase 2 Substantial Completion Date, etc.), which date shall be set forth in the Notice to Proceed for that phase. The definition and requirements of Substantial Completion are set forth in the General Conditions. The Substantial Completion Date(s) shall only be changed by a written change order.

**4.5 FINAL COMPLETION.** The Contractor shall achieve Final Completion of the entire Work as set forth in the Notice to Proceed (“Final Completion Date”). If the Work is to be performed in phases, each phase may have a separate Final Completion Date (e.g., Phase 1 Final Completion Date, Phase 2 Final Completion Date, etc.), which date shall be set forth in the Notice to Proceed for that phase. The requirements for Final Completion are defined in the General Conditions as well as the Specifications of the Project. The Final Completion Date(s) shall only be changed by written change order.

**4.6 LIQUIDATED DAMAGES FOR DELAY.** If the Contractor fails to achieve Substantial Completion of a phase of the Work or of the entire Work by the Substantial Completion Date(s) set forth in the applicable Notice to Proceed (as extended by Change Order, if applicable), and the delay is not excused by the College, then the Contractor shall pay the College the following amounts as liquidated damages for delay (“Liquidated Damages”) for each calendar day that the phase of the Work or the entire Work is not substantially completed beyond the applicable Substantial Completion Date:

[ \$ 1/20th of 1% of the total contract price per calendar day ]

The College and the Contractor agree that the actual loss to the College from construction delays and the inability to use the Project or any phase of the Project in a substantially completed state are for the most part difficult to quantify, and that the foregoing Liquidated Damages formula results in damages amounts that are a reasonable estimate of the damage to the College for not being able to use the Project in a substantially completed state and are not penalties and are not intended to be penalties. The College may deduct Liquidated Damages from payments due under this Contract, but its failure to withhold Liquidated Damages or to assert a claim for Liquidated Damages shall not be deemed a waiver of the College’s right to withhold or to assert a claim for damages for any delay that occurs at any time on the Project.



**ARTICLE 5**  
**CONTRACT PRICE**

**5.1 CONTRACT PRICE.** The Contractor shall be paid \$\_\_\_\_\_ for the complete performance of this Contract, which was proposed by the Contractor in its bid and accepted by the College (the "Contract Price"). The Contractor shall be entitled to additional compensation for authorized changes which include the cost of the changes and mark-ups included in change orders approved in writing by the College in accordance with the change order provision set forth in the General Conditions.

**5.2 ALTERNATES.** The Contract Price is based upon and includes the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the College:

[\_\_\_\_\_]

**5.3 UNIT PRICES.** The Contract Price is based upon and includes the following unit prices, if any, which are described in the Contract Documents:

[\_\_\_\_\_]

**5.4 ALLOWANCES.** The Contract Price is based upon and includes the following allowances, if any, which are described in the Contract Documents:

[\_\_\_\_\_]

**ARTICLE 6**  
**PAYMENTS TO THE CONTRACTOR**

**6.1 PAYMENT.** The Contractor will be paid by the College in accordance with this Article and the payment provision in the General Conditions.

**6.2 MONTHLY PROGRESS PAYMENTS.** The College will make progress payments as the Work proceeds based on written invoices submitted monthly by the Contractor and approved by the Architect and the College. No payments will be made until the Contractor submits a unit schedule break down showing the portions of the total Contract Price for each principal category of Work and value loaded CPM schedule allocating the Contract Price among the schedule activities. Monthly progress payment amounts shall be based on the percentages of the Work completed as of the end of the pay period (less earlier payments). All payment requests or invoices and all payments shall be governed by the payment provision of the General Conditions as well as any special requirements of this Contract, including the requirement that progress payments shall be based on a unit schedule breakdown and a value loaded CPM schedule.



**6.3 RETAINAGE.** The College will retain 2% of the amount due on each progress payment pending Final Completion of the Work. The holding and release of retainage shall be governed by the payment provision of the General Conditions.

**6.4 CHANGE ORDERS.** The Contractor shall invoice for change order work in the monthly progress payment invoices as the change order work is performed, but only after a written change order and TCNJ issued Purchase Order has been signed by the College. Changes in the Work shall be governed by the change order provision of the General Conditions.

**6.5 FINAL PAYMENT.** Upon final completion of all Work included in the Contract Documents including all change orders, acceptance of the Work by the Architect and the College, the satisfactory completion of all of the requirements in the General Conditions for final completion, and the issuance of the Certificate of Final Completion, the Contractor will be paid the fully adjusted Contract Price including any retainage withheld (less earlier payments). The invoice for final payment and final payment shall also be subject to the payment provision of the General Conditions and any special requirements of this Contract.

**6.6 PAYMENT TERMS.** All invoices and payments shall also be subject to the General Conditions, including the provisions regarding payments, to the right of the College to withhold payments or to make deductions from payments, and to the Prevailing Wage Act requirements set forth in the General Conditions. The College will pay proper final invoices within thirty (30) days of their submission to the College with the approval of the Architect.

**6.7 SUBMISSION OF INVOICES.** Prior to the submission of the invoice, the Contractor will submit to the College and the Architect, in draft form, a “pencil copy” of the monthly invoice for review and approval setting forth each line item for which the Contractor intends to request payment in that invoice based on the claimed percent completed for that line item. Upon receipt of said “pencil copy”, the College and the Architect shall observe the Work in place and, on the basis of such observations, will either approve the amounts requested or modify the Contractor’s request, based on the College’s independent assessment of the Work in place. The College will then return the pencil copy invoice to the Contractor for the Contractor to then adjust and submit the final invoice with the agreed to percentages completed per line item to the College for payment. No invoice shall be submitted for payment until all amounts and completion percentages have been determined in this manner.

**6.8 PROMPT PAYMENT ACT.** For the purposes of the State’s Prompt Payment Act, N.J.S.A. 2A:30A-1, et seq.:

(a) An invoice will be deemed to have been received when it is received by the College at the address designated in the pre-construction conference for receipt of the invoices.

(b) The “billing date” as that term is used in N.J.S.A. 2A:30A-2 shall be the earlier of the date upon which an invoice for payment is approved for payment or 20 days after the invoice is received, unless within such 20 day period the invoice is found to be incomplete or



otherwise unacceptable and returned to the Contractor, with a written explanation of deficiencies, the amount withheld and the reasons for withholding payment.

(c) In the event that an invoice is found to be deficient and returned to the Contractor, the “billing date” shall be calculated from the date that a corrected invoice is received.

(d) Payment shall be considered to have been made on the date on which a check for such payment is dated.

(e) Payment terms (e.g., “net 20”) offered by the Contractor shall not govern the College’s obligation to make payment.

(f) The following periods of time will not be included in the calculation of the due date of the Contractor’s invoice:

(i) Any time elapsed between receipt of an improper invoice and its return to the Contractor, not to exceed 20 calendar days; or

(ii) Any time elapsed between the College’s return of an improper invoice to the Contractor and the College’s receipt of a corrected invoice.

If the State’s Prompt Payment Act is amended, or the language stated herein is inconsistent with the language contained in the State’s Prompt Payment Act, the language of the State’s Prompt Payment Act shall control.

**6.9 LIMITATIONS ON APPLICABILITY.** The provisions of this Article shall not govern the College’s payment obligations nor shall they supersede or modify any other contractual provision allowing the withholding of monies from the Contractor to the extent that the Contractor has not performed in accordance with the provisions of the Contract Documents. This Article also shall not govern the College’s payment obligations nor supersede or modify any other contractual provision governing the Contractor claims for additional compensation beyond the base Contract Price and approved change orders.

**6.10 INTEREST.** Interest shall be payable on amounts due the Contractor if not paid within thirty (30) calendar days after the billing date specified above, as provided under the State’s Prompt Payment Act, N.J.S.A. 2A:30A-1, et seq. Interest on amounts due shall be payable to the Contractor for the period beginning on the day after the required payment date and ending on the date on which the check for payment is drawn. Interest may be paid by separate payment to the Contractor, but shall be paid within 30 days of payment of the principal amount of the approved invoice. Nothing in this Article shall be construed as entitling the Contractor to payment of interest on any sum withheld by the College for any reason permitted under the Contract Documents or applicable law, or on any claim for additional compensation, over and above sums due under the base Contract Price or approved change orders.



**ARTICLE 7**  
**DISPUTE RESOLUTION**

**7.1** If a dispute or claim arises out of or relates to this Contract, or the breach thereof, and if the dispute cannot be settled through negotiation, the method for resolution of such dispute or claim shall be as provided in the dispute resolution provision of the General Conditions.

**ARTICLE 8**  
**TERMINATION OR SUSPENSION**

**8.1** This Contract may be terminated by the College as provided in the termination and suspension provision in the General Conditions.

**8.2** The Work may be suspended by the College or the Contractor as provided in termination and suspension provision in the General Conditions.

**ARTICLE 9**  
**INSURANCE AND BONDS**

**9.1 CONTRACTOR'S INSURANCE.** The Contractor shall purchase and maintain insurance as set forth in the insurance and bonds provision of the General Conditions. To the extent the Contractor shall be required to purchase and maintain additional insurance or insurance that differs from that set forth in the General Conditions, such requirements are set forth below:

[ \_\_\_\_\_ ]

**9.2 SUBCONTRACTOR'S INSURANCE.** The Contractor shall ensure that its Subcontractors purchase and maintain insurance as set forth in the insurance and bond provision of the General Conditions.

**9.3 PAYMENT AND PERFORMANCE BOND.** The Contractor shall furnish the College with a payment bond and a performance bond as set forth in the insurance and bond provision of the General Conditions.

**ARTICLE 10**  
**OTHER PROVISIONS**

**10.1 CONTRACTOR REPRESENTATIONS.** The Contractor represents to the College that it has:

(a) **Examination of the Contract Documents.** Examined and carefully studied the Contract Documents and the other documents in the bid documents, and that they are sufficient for performing the Work at the Contract Price.



(b) **Examination of Site.** Visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect the cost, progress, and performance of the Work.

(c) **Familiarity with Law.** Familiarized itself with all federal, state, and local laws and regulations that may affect the cost, progress, and performance of the Work.

(d) **Familiarity with Other Information and Other Documents.** Carefully studied all reports of investigations and tests of the site and subsurface conditions at or contiguous to the site and all drawings of physical conditions at the site including surface or subsurface composition, water, structures and utilities at or near to the site.

(e) **Additional Information Not Required for Bidding or Contract Performance.** Does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price.

**10.2 ASSIGNMENT OF CONTRACT.** The Contractor may not assign this Contract or any rights under or interests in this Contract including its right to payments under this Contract.

**10.3 CONTRACTOR PERSONNEL ASSIGNED.** The Contractor's team for this Project shall consist of the following personnel, who shall not be reassigned without the College's prior written consent:

<u>Name</u>	<u>Position</u>
_____	<u>Project Executive</u>
_____	<u>Project Manager</u>
_____	<u>Project Superintendent</u>
_____	<u>Project Scheduler</u>

The College reserves the right to request and have any member of the Contractor's or Subcontractor's staff replaced on the Project for any non-discriminatory reason.

**10.4 NOTIFICATIONS/AUTHORIZED REPRESENTATIVE.** All Notices required under this Contract shall be in writing, signed by the party giving same, and shall be deemed properly given only if hand delivered, sent by reputable overnight courier, or by registered or certified U.S. mail, return receipt requested, postage pre-paid and addressed as provided below.



**Notice to the Contractor/Contractor's Representative.** Written notices from the College and/or the Architect to the Contractor should be addressed to the Contractor's Representative:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attn: \_\_\_\_\_

**Notice to the College/College's Representative:** Written notices from the Contractor to the College should be addressed to the College's Representative:

The College of New Jersey  
PO Box 7718,  
Ewing, New Jersey 08628  
Attn: \_\_\_\_\_

with a copy to the College's General Counsel as follows:

Michael J. Canavan  
Vice President and General Counsel  
The College of New Jersey  
PO Box 7718  
Ewing, NJ 08628-0718

The College's Contracting Officer hereby authorizes the College's Representative to receive all Contract related correspondence.

**Notice to the Architect:** Written notices from the Contractor to the Architect should be addressed to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attn: \_\_\_\_\_

Neither the College's nor the Contractor's Authorized Representatives shall be changed without 7 days' written notice to the other party.

**10.5 CONTRACT TERMS, CHANGES, AND LAW.** This Contract constitutes the entire agreement between the College and the Contractor, and it shall be governed by the law of the State of New Jersey. The terms and conditions of this Contract may not be changed except by a writing signed by the Contractor and the College.



**10.6 COUNTERPARTS AND SIGNATURES.** This Contract may be executed in counterparts. All executed counterparts shall constitute one contract, and each counterpart shall be deemed an original. The parties hereby acknowledge and agree that facsimile signatures or signatures transmitted by electronic mail in so-called "pdf" format shall be legal and binding and shall have the same full force and effect as if an original of this Contract had been delivered. The College and the Contractor (1) intend to be bound by the signatures on any document sent by facsimile or electronic mail, (2) are aware that the other party will rely on such signatures, and (3) hereby waive any defenses to the enforcement of the terms of this Contract based on the foregoing forms of signature.

**10.7 NO IMPLIED COVENANTS OR WARRANTIES.** The Contractor acknowledges that there are no implied covenants or warranties from the College under this Contract.

**10.8 SEVERABILITY.** If any term or provision of the Contract Documents are to any extent held invalid or unenforceable, and if the provisions of the Contract Documents that are essential to each party's interests otherwise remain valid and enforceable, then (i) the remaining terms and provisions in the Contract Documents will not be affected thereby, (ii) each term and provision of the Contract Documents will be valid and enforceable to the fullest extent permitted by law, and (iii) the court/arbitrator(s) will give the offending provision the fullest meaning and effect permitted by law.

**10.9 HEADINGS.** The headings used in this Contract are for convenience and reference only, and are not part of this Contract, and do not in any way control, define, limit or add to the terms and conditions hereof.

**10.10 INTERPRETATION/RULES OF CONSTRUCTION.** The parties acknowledge that each party, and if it so chooses, its counsel, have reviewed and revised this Contract and that the normal rule of construction to the effect that any ambiguities be resolved in favor of the non-drafting party shall not be employed in the interpretation of this Contract or any amendments or exhibits thereto.

#### **THE COLLEGE OF NEW JERSEY**

By \_\_\_\_\_  
William Rudeau,  
Director of Design and Construction

By \_\_\_\_\_  
Mark Mehler, Associate VP  
for Finance & Budget Planning

Date \_\_\_\_\_

Date \_\_\_\_\_



By \_\_\_\_\_  
Sharon Blanton,  
Vice President for Operations

Date \_\_\_\_\_

By \_\_\_\_\_  
Anup Kapur,  
Executive Director of Procurement

Date \_\_\_\_\_

By \_\_\_\_\_  
Maggie Greco,  
Senior Director of Facilities Planning  
and Construction

Date \_\_\_\_\_

**CONTRACTOR:**

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_



GENERAL CONDITIONS  
OF THE  
CONTRACT FOR CONSTRUCTION

Last Revised September 2024



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**ARTICLE 1**  
**CONTRACT DOCUMENTS, INTERPRETATION, INFORMATION FOR BIDDERS,  
CLAIMS BASED ON BID AND CONTRACT DOCUMENTS**

**1.1 Definitions.**

Terms defined in the Contract for Construction shall have the meaning provided therein. Definitions for the purpose of these General Conditions include the following:

Addendum: A document issued to bidders by the College prior to the bid due date which supplements, revises or modifies the bid solicitation documents furnished for bidding purposes, and which must be identified and included in bids for the Contract.

Architect: The Architect (A/E) engaged by the College to design the Project, to prepare the design documents and assist with bid documents, and may administer the Contract and act as the agent of the College as described in the Contract.

Bulletin: A document prepared by the Architect describing proposed changes or additions to the Work in the Contract Documents that is issued after Contract award. If the College decides to implement the change, it will provide the bulletin to the Contractor and ask it to submit a change order proposal or request (in accordance with the change order provisions in the Contract for Construction, these General Conditions and other sections of the bidding documents).

Change Order Proposal or Change Order Request: A written proposal or request submitted by the Contractor in accordance with the change order provision of the Contract for Construction, these General Conditions and other sections of the bidding documents, including proposals submitted in response to Contract Change Directives, which proposes cost, time and other terms under which the Contractor will perform changed work under the Contract. If accepted by the College, a written change order signed by the Vice President for Administration and a TCNJ Purchase Order signed by the Contracting Officer of the College, and if accepted by the Contractor in writing, it will become part of the Contract as a change order.

The College's Representative: The College's Representative is a person or persons designated by the College to act on its behalf in administering the Contract for the College. The College's Representative may include the Director of Campus Construction, the Project Manager or an independent construction manager working for the Office of Campus Construction.

College Site Superintendent: The College Site Superintendent is a person or persons designated by the College to witness, observe, record and report on activities in and around the construction site. The Site Superintendent does not have the authority to stop or change the scope of the Work of the Contract Documents.

Contract: The Contract Documents all form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual



relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the College and a Subcontractor or a Sub-subcontractor, (3) between the College and the Architect or the Architect's consultants or (4) between any persons or entities other than the College and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's Contractor's duties.

Contract Amendment: The Contract can only be amended by (1) a written amendment identified as such that is signed by the College and the Contractor, (2) a change order signed in accordance with the Contract Documents, (3) a written Contract Change Directive (CCD) issued by the College that should result in a change order unless issued to address some fault of the Contractor, (4) a written approval or acceptance by the College or the Architect of a change requested by the Contractor in writing, provided the request for a change is specifically identified in a submittal.

Contract Change Directive (CCD): A Contract Change Directive (CCD) is a written directive issued by the College which orders an addition, deletion, clarification of a disputed item or revision in the Work, or a response to an emergency. A CCD does not by itself change the Contract, but it should result in a change order which does change the Contract Price or Contract Times if warranted. A CCD should specify the terms of the change order (if deemed warranted by the College) which will result, and/or specify a deadline for the submission by the Contractor of a proper change order request, and/or contain other similar terms.

Contract Documents: The Contract Documents are enumerated in Article 2 of the Contract for Construction.

Contract Limit Lines: The lines shown on the Plans that limit the boundaries of the Project site, and beyond which no construction work or activities shall be performed by the Contractor unless otherwise specified in the Contract Documents, including the Plans and Specifications and supplemental General Conditions.

Contracting Officer: The Associate Treasurer of the College shall be the Contracting Officer in connection with the Contract and the Project. The Contracting Officer and other designee shall have authority to act on behalf of the College under the Contract.

Field Order (FO): A written order issued by the Architect or the College which requires minor changes in the Work that do not result in a change in the Contract Price or the Contract Times. If the Contractor believes that a field order warrants the issuance of a change order that changes the Contract Times or Contract Price, it must notify the College and the Architect in writing within 48 hours, and its notice must specify the terms of the change order that it believes are warranted, including specific time and price change requests.

Plans: The Plans are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, and diagrams.



Project: The Project is the total construction of the Work performed under the Contract Documents and may include construction by the College and by separate contractors that the College has specifically identified.

Specifications: The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services prepared by the Architect or the College.

Supplemental General Conditions: The part of the Contract Documents which amends or supplements these General Conditions for the Project.

Work: The construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

## **1.2 Intent Of Contract Documents.**

The intent of the Contract Documents is to describe a functionally complete and aesthetically acceptable Project to be constructed and completed by the Contractor in every detail in accordance with the Contract Documents. Any Work, services, materials, equipment or documentation that may be reasonably inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce a complete Project shall be supplied by the Contractor whether or not specifically identified at no additional cost to the College. Where the Contract Documents describe portions of the Work in general terms but not in complete detail, only the best construction practices and only materials and workmanship of the first quality are to be used. Only where the Contract Documents specifically describe a portion of the Project as being performed by others is the Work to be considered to include less than the entire Project.

## **1.3 Interpretation Of Contract Documents.**

When two or more interpretations of a Specification for the Work are possible, the most stringent or the highest cost interpretation shall apply as determined by the Architect. The Architect (or in the absence of the Architect, the College) shall be the sole interpreter of the Plans and Specifications and the Contractor's performance therewith. It is the intent of these Plans and Specifications to provide materials of a quality consistent with the highest standards provided under similar circumstances in the same general geographical area and that will result in long- term use and efficient operation.

## **1.4 Law And Referenced Standards.**

The Contractor is required to comply with all federal, state and local laws and regulations that apply to the Project, the Work and the Contract. Where the Contract Documents refer to any publication, including but not limited to any standard, which affects any portion of the Work or the Project, it shall be considered to mean the edition or revision in effect on the bid due date unless otherwise specified in the Contract Documents. No provision in any publication including



any standard shall create an obligation on the part of the College or the Architect to supervise or direct the Contractor's Work.

### **1.5 Plans And Specifications.**

The Plans will include general plans and such details as deemed necessary to give a comprehensive representation of the construction required. The Contractor shall keep one set of Plans available at the Project site, which shall be available for inspection by the College and the Architect at all times. All alterations affecting the requirements in the Plans must be authorized by the College and the Architect in writing, and shall be promptly noted on the Contractor's record set of Plans, which are maintained at the site for inspection by the Contractor, the College and the Architect.

### **1.6 Order Of Precedence Of Contract Documents.**

Each of the Contract Documents is an essential part of the Contract, and a requirement specified in one part of the documents is binding as if specified in all. The Contract Documents are intended to be complementary and to describe and provide for a complete Project. The obligations of the Contractor under the various Contract Documents shall be cumulative and to the extent that one of the Contract Documents imposes a stricter or more costly requirement or higher standard upon the Contractor than does another Contract Document, the more stringent or more costly requirement or higher standard, as determined by the Architect, shall apply. Otherwise, if there is any conflict among the Contract Documents, the signed Contract for Construction and all approved change orders shall control. As to the other Contract Documents, the order of precedence shall be as follows:

- (a) Contract for Construction
- (b) Addenda
- (c) Supplemental General Conditions
- (d) General Conditions
- (e) Specifications
- (f) Plans
  - i. Notes
  - ii. Large Scale Details
  - iii. Sections
  - iv. Elevations
- (g) Scope of Work Description

### **1.7 Organization Of Plans And Specifications.**

The arrangement of the Plans and the organization of the Specifications into divisions, sections or articles shall not be construed by the Contractor as being intended to divide or allocate the Work among Subcontractors or trades or to establish the scope of the Work to be performed by particular Subcontractors or trades. The College is not liable for the Contractor dividing and separating the Contract Documents into individual packages to Subcontractors. Items that the Contractor fails to include or provide for shall be at the Contractor's sole risk and



cost. The Contract Documents work together as a whole and, therefore, the Contractor is required to coordinate the entire package with all its Subcontractors.

### **1.8 Required Approvals.**

In all cases where approvals or decisions under the Contract Documents are required from the College, the Work shall not proceed without the required approvals and decisions in writing.

### **1.9 Conformity Of Work To Contract Documents.**

All Work performed shall conform to the lines, grades, cross-sections, dimensions, material requirements, tolerances, details and other information in the Contract Documents. The purpose of tolerances is to accommodate occasional minor variations from the middle portion of the tolerance range that are unavoidable despite reasonable construction practices. When a maximum or minimum tolerance value is specified, the material and the Work shall be controlled so that they shall not be preponderantly of borderline quality or dimension.

### **1.10 Work Involving Existing Structures.**

On projects involving alterations, remodeling, repairs, installations or other work in pre-existing structures or systems, the Contractor shall by personal inspection of the existing structures and systems satisfy itself as to the accuracy of any information provided that may affect the quantity, size and/or quality of materials required for a satisfactorily completed Project, including information that is not identified or included in the Plans and Specifications. The Contractor shall provide all material and labor required to complete the Work based on conditions that can be reasonably observed by a competent and diligent contractor before bidding.

### **1.11 Verification Of Dimensions.**

The Contractor shall verify all dimensions at the job site and shall take any and all measurements necessary to verify the information in the Plans. The Contractor shall properly and accurately layout and survey the Work. Any errors or discrepancies affecting the layout of the Work shall be reported to the Architect and the College immediately in writing. No Work affected by any error or discrepancy shall proceed until such discrepancy is resolved by a written decision of the Architect with the consent of the College.

### **1.12 Manufacturer Literature.**

Manufactured articles, materials and equipment shall be installed, applied, connected, erected, used, cleaned and conditioned in accordance with the manufacturer's written instructions unless otherwise specified in the Contract Documents. If there is any conflict between manufacturer literature and the Contract Documents, it shall be reported by the Contractor to the Architect and the College in writing, and the Contractor shall not proceed without a written decision by the Architect with the consent of the College.



### **1.13 Quality -- General Requirement.**

Where no explicit quality or standard are specified for Work, materials or equipment, they shall be new, of good quality, free of defects, suitable for their intended use, in conformity with the Contract Documents, and consistent with the highest quality of the surrounding Work and of the construction of the Project generally.

### **1.14 Examination Of Contract Documents Before Bidding/Errors.**

The Contractor represents and warrants that before bidding it examined and carefully studied the Contract Documents and other documents included or referred to in the bid documents. The Contractor also represents and warrants that the documents are sufficient for bidding and performing the Work at the Contract Price. Should it appear that any of the Work or materials are not sufficiently or properly detailed or explained in the Contract Documents, the Contractor shall notify the College in writing before the bid deadline for submitting questions.

Errors, omissions, conflicts, discrepancies, inconsistencies or other defects in the Contract Documents or between the Contract Documents and any codes, standards or other applicable documents which are capable of being discovered by a diligent and competent contractor before bidding shall be reported to the College in writing before the bid deadline for submitting questions. If errors, omissions, inconsistencies or other defects in the Contract Documents are not discovered until after the bid due date, the Contractor shall promptly notify the College and the Architect of them in writing, provide written recommendations regarding changes or corrections to resolve any such errors, omissions, inconsistencies or defects, and obtain the Architect's written interpretation and approval with the consent of the College before proceeding with the Work affected.

### **1.15 Site Information.**

Soil borings, test pits or other subsurface or site information regarding the physical site and subsurface conditions on or near the site may have been obtained from independent contractors for the purpose of preparing the design documents for the Project rather than for the purpose of contractor estimating or bidding. Such information may be identified or included in the Contract Documents so that it can be reviewed by bidders during the bidding phase, but because of the limited nature and purpose of the information, it shall not be considered to be part of the Contract Documents, and the Contractor must assume responsibility for interpreting and relying upon the information.

### **1.16 Sufficiency Of Documents Provided For Bidding.**

The Contractor represents and warrants that before bidding it carefully studied all reports, surveys and documents included or identified in the bid documents regarding observations, inspections, investigations and tests of the site and subsurface conditions at or near the site, and all information provided to bidders regarding physical conditions at or near the site, including surface and subsurface composition, water, structures and utilities, and that it determined that no further examinations, investigations, tests, studies or data were necessary for bidding or the performance of the Work at the Contract Price. If the Contractor concluded that additional



information is required, it must notify the College in writing before the bid deadline for submitting questions.

#### **1.17 Examination Of Site Before Bidding.**

The Contractor represents and warrants that before bidding it familiarized itself with the site and was satisfied as to the general, local and site conditions which may affect the cost, progress and performance of the Work and the Contract, and that its bid and bid price take into account all such conditions. No additional costs will be borne by the College for conditions that existed and were reasonably observable or described at the time of bidding.

#### **1.18 Hazardous Materials On Site.**

The Contractor will not be responsible for hazardous environmental conditions uncovered or discovered on the site that were not disclosed in the Contract Documents and that were not caused by the Contractor or anyone working through or under the Contractor. If such conditions are discovered, the Contractor shall stop work and notify the College in writing immediately. The College may issue a written directive to the Contractor requiring it to stop work until the hazardous environmental condition is remedied, and the Contractor will be entitled to an extension of the Contract Times if an extension is warranted under the provisions of the Contract for Construction and these General Conditions regarding extensions. The College may also make changes in the Contract in response to the conditions, and the Contract will be changed in accordance with the change order provisions in the Contract for Construction and these General Conditions.

#### **1.19 Limitation On Claims Based On Contract Documents And Information Provided For Bidding.**

The Contractor may not assert claims for extra compensation beyond the bid and Contract Price for constructing the completed Project by reason of any errors, omissions, inconsistencies, or defects in the Contract Documents that are discoverable by a diligent and competent contractor, because of (i) its obligation to review and study the bid documents before submitting its bid, (ii) its representation in the Contract Documents that it did so, and (iii) its obligation to notify the College in writing of any such errors, omissions, inconsistencies, or defects before submitting its bid. In addition, the Contractor may not assert claims for extra compensation beyond the bid and Contract Price for constructing the completed Project by reason of any lack of information affecting the construction of the Project at the time of bidding, or errors in the information included or referenced in the bid documents except to the extent explicitly permitted by the Contract for Construction or these General Conditions. The Contractor shall notify the College in writing before submitting its bid of any errors or omissions in the information provided or be precluded from seeking extra compensation or asserting a claim. This limitation on claims may be modified and further restricted in the signed Contract for Construction when the Contract Documents explicitly require the Contractor to participate in any aspect of the design phase.

The Contractor may assert claims for extensions and additional compensation in accordance with the provisions of the Contract for Construction and these General Conditions if



information regarding the site that is identified in the bid or Contract Documents is factually inaccurate, and the inaccuracy is one that a reasonably competent and diligent contractor would not discover in preparing a bid. The Contractor may not assert a claim for an extension or extra compensation when it claims, not that the information is factually inaccurate, but rather that conclusions, inferences or judgments made in reliance on accurate information prove to be incorrect.

## **ARTICLE 2**

### **THE COLLEGE**

#### **2.1 General Rights And Responsibilities Of The College.**

The College as the owner of the Project is entitled to have the Contractor perform and complete the Work in accordance with the Contract Documents, including the time of completion, quality and documentation requirements of the Contract. The College for its part undertakes to furnish the site, to notify the Contractor of any restrictions on the site that could affect the Contractor's performance of the Contract, to obtain approvals relating to the site that are needed for the construction to proceed, to pay the Contractor in accordance with the Contract, and to act reasonably in reviewing all documentation, claims and questions properly submitted to it under the Contract. The College also undertakes to provide the information and items that it expressly agrees in the Contract Documents to provide.

The College shall also have such other rights and responsibilities as are specified in the Contract Documents. The College will not supervise the Contractor's Work or be responsible for the Contractor's construction means and methods, or the Contractor's safety practices, or any failure of the Contractor to comply with the Contract Documents or any laws or regulations.

#### **2.2 The College's Representative, Authority To Decide Contract Questions.**

The Contracting Officer delegates its authority to the College's Representative who is authorized to act and make decisions on behalf of the College regarding matters specified in the Contract Documents. However, the College's Representative is not authorized to make or agree to material changes to the Contract Documents or changes involving the Contract Times or Contract Price.

All changes to the Contract Documents including change orders that modify Contract Price, Contract Times or other material change to the Contract Documents must be reviewed and approved by the Contracting Officer or his/her designee. The Contracting Officer designates that the Vice President for Administration is authorized to approve change orders.

The College's Representative, in consultation with the Architect, is authorized to decide on behalf of the College, all questions regarding the quality, acceptability and rate of progress of the Work, all questions regarding the interpretation of the Contract Documents, the acceptability of the performance of the Contract by the Contractor, and the compensation due to the Contractor. Where the College's Representative is authorized to render decisions under the



Contract for Construction or these General Conditions regarding disputes or claims, he/she shall consult with the Architect and shall not act arbitrarily so as to unfairly benefit either the College or the Contractor.

### **2.3 Required Approvals.**

In all cases where approvals or decisions are required from the College under the Contract Documents, such approvals or decisions shall be made reasonably, except in cases where a specific standard applies such as, for example, situations where the College is entitled to exercise unqualified discretion in selecting the types of materials, products or construction which it decides to procure.

### **2.4 Information Required From The College.**

Information which the Contract Documents specify the College will provide shall be provided with reasonable promptness.

### **2.5 Permits.**

The College will arrange and pay for permits and permit inspections, including building code permits except to the extent that the Specifications specify otherwise. The Contractor will arrange for and coordinate all inspections and the dates and times for all inspections with local, state and independent agencies and include the College's Representative or the Site Superintendent.

### **2.6 The College's Inspection Of The Project.**

The College shall have the right to be represented at the site by the College's Representative(s), the Site Superintendent and other College employees designated by the College, the Architect, and other consultants designated by the College or the Architect. The College and its representatives shall have the right to visit the site, inspect Work and materials, inspect Project documentation, conduct tests, attend meetings, meet with the Contractor' and the Subcontractors' representatives, investigate problems, conduct studies, and make reports. The College and its representatives shall be allowed access to all parts of the Work, and the Contractor shall furnish them with information and assistance when they request it.

The Contractor shall give the College and the Architect timely notice of readiness of Work for observation, inspection and testing, and shall cooperate with these efforts. The Contractor shall also comply with any inspection and testing procedures specified in the Contract Documents.

The Contracting Officer, the Architect and the College's Representative shall have the right to direct the Contractor to remove or uncover unfinished Work if deemed necessary to inspect Work or materials in place.

If Work is covered before it is inspected because the College, the Architect or any consultant were not afforded reasonable notice and an opportunity to inspect, or where the



Contract Documents or any law require an inspection, the Contractor shall uncover and replace Work at its own expense if required to do so by the College.

If any other portion of the Work not specifically required to be inspected is covered, and the College or the Architect did not ask to observe or inspect the Work before it was covered, the College may nonetheless ask to inspect the Work. If the College makes such a request, the Contractor shall uncover the Work for inspection. If the Work uncovered is found to be in accordance with the Contract Documents, the cost of uncovering and replacement shall be paid by the College by a change order. If the Work uncovered is found not to be in compliance with the Contract Documents, the Contractor shall pay all costs of uncovering and replacement, and also remedy the defect or deficiency at its own cost.

The College at all times retains the right to stop all or part of the Work by a written direction because of defective Work until the defect is eliminated. This right shall not give rise to any duty on the part of the College to exercise the right for the benefit of the Contractor or those performing its Contract.

The College at all times retains the right to stop all or part of the Work due to concerns with the effectiveness of the Contractor's safety program required under Article 5.2. The College may require the Contractor to provide a written plan to correct safety deficiencies, an on-site safety supervisor, or other administrative or engineering controls to ensure the safety of personnel impacted or potentially impacted by Contractor operations. The Contractor shall indemnify, defend and hold the College harmless from fines issued by Federal, State or Local OSHA enforcement.

## **2.7 The College's Inspectors, Duties And Limitations**

If the College designates inspectors to inspect Work and materials and Project documentation, they will not be authorized to alter or waive any requirements or provisions in the Contract Documents. The College's inspectors will not be authorized to issue instructions contrary to the Contract Documents or to act as foremen or employees of the Contractor. The College's inspectors have the authority to reject unsuitable Work or materials, subject to written confirmation by the College's Representative. If the Contractor believes that any action of a College inspector is contrary to the Contract Documents, it shall notify the College's Representative and the Architect in writing within 48 hours. The College does not undertake to have inspectors sufficient in number to inspect every item of Work or material as it is provided, or to have inspectors with the expertise needed to judge every aspect of the Work.

The Contractor shall remain responsible for defective Work or materials irrespective of any inspections or lack of inspections during the Work. If the Contractor seeks a binding determination of the acceptability of Work or materials during the performance of the Contract, it shall do so by making a written request for such a determination to the College's Representative with a copy to the Architect.



## **2.8 The College's Rejection Of Defective Work.**

The College shall have the right to reject defective Work, materials, or equipment at any time, and to require the Contractor to remove and replace it at the Contractor's expense. The Contractor shall also be responsible for repairing damage to other work caused by defects or deficiencies in its Work. The College's Representative, upon consultation with the Architect, may elect to accept Work or materials that do not conform to the Contract Documents and to credit or reduce the Contract Price, but the College shall have no contractual obligation to elect this remedy. Changes to the Contract Documents in these circumstances shall be recorded as a change order under the change order provision of the Contract for Construction and these General Conditions.

## **ARTICLE 3** **THE ARCHITECT**

### **3.1 The Architect's General Role.**

The Architect is, by contract with the College, responsible for the design of the Project. During construction, the Architect is responsible for reviewing the Contractor's submittals to determine if they conform to the Contract Documents and good industry practice, to provide some level of inspection to determine if Work and materials provided by the Contractor conform to the Contract Documents and good industry practice, and to review the Contractor's payment applications. During the performance of the Work, the Architect may investigate any defects and deficiencies in the Work or materials provided and make recommendations to the College regarding the defects or deficiencies. The Architect will conduct inspections to determine if the Contractor has achieved proper Substantial and Final Completion and submitted all documents required at Substantial and Final Completion. The Contractor shall cooperate with and render assistance to the Architect in the performance of these duties.

### **3.2 The Architect's Access And Facilities.**

The Contractor shall allow the Architect and its consultants access to the Project at all times and shall facilitate their access to inspect Work and materials and Project documentation. The Architect and its consultants shall be permitted to attend job meetings, scheduling meetings and other meetings at the site and the Contractor shall facilitate their ability to do so. The Contractor shall provide an office at the site for the Architect if the Specifications require it to do so.

### **3.3 Limitation Of The Architect's Responsibilities.**

The Architect will not be responsible for or have control of construction means and methods or safety precautions and programs in connection with the Work. The Architect will not be responsible for or have control of acts or omissions of the Contractor, its Subcontractors, or any of their agents or employees, or any other person performing any of the Contract Work.



### **3.4 The Architect's Rejection Of Work.**

The Architect may recommend rejection of Work or materials that it believes does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, it may recommend to the College special inspections or testing of Work or materials, including completed Work and materials.

### **3.5 The Architect's Review Of The Contractor's Submittals.**

The Architect will review, approve or take other appropriate action regarding the Contractor's submittals, such as shop drawings, product data and samples, to assure that they conform with the design requirements and Contract Documents. The approval of a specific item shall not be deemed to constitute approval of an assembly of which the item is a component.

### **3.6 The Architect's Review Of The Contractor's As-Built Plans.**

The Architect will periodically review the Contractor's as-built plans maintained at the site to ensure that they are up-to-date, and shall review the completed as-built plans at Project completion to ensure that they are complete and are provided to the College.

### **3.7 The Architect's Determination Of Substantial and Final Completion.**

The Architect will conduct inspections to determine the dates of Substantial and Final Completion and to determine if the Contractor has properly Substantially and Finally completed the Project. The Architect will obtain from the Contractor all written warranties and all other documents that the Contractor is required to provide at Substantial and Final Completion of the Project.

## **ARTICLE 4** **THE CONTRACTOR**

### **4.1 The Contractor's Responsibility For Performance Of The Contract And Work.**

The Contractor is the person or entity identified as such in the Contract. The Contractor shall be lawfully licensed in the jurisdiction where the Project is located.

The Contractor shall perform all of the duties in the Contract Documents, shall furnish the labor, materials and equipment to complete the construction of the Project in accordance with the Contract Documents, and furnish all services, labor, materials and equipment necessary or appropriate to construct the Project. The Contractor shall manage, supervise, schedule, direct, and inspect the Work as competently, skillfully, and efficiently as possible, and shall be solely responsible for all construction means, methods, techniques, safety, security, sequences, procedures, and coordination.



The Contractor shall comply with all applicable laws, and shall establish and maintain reasonable quality assurance and safety programs in connection with its Work. The Contractor shall complete the Work in compliance with the Contract Documents and by Milestone, Substantial Completion and Final Completion Dates in the Contract for Construction or any authorized extensions thereof. The Contractor shall maintain good order and discipline at the site at all times.

#### **4.2 The Contractor's Key Personnel.**

The Contractor shall assign to the Project a Project executive, Project manager, superintendent, and scheduler, and such other key personnel as are specified in the Contract for Construction or as required to carry out the requirements of the Project. The Contractor shall not remove or replace such key personnel without the College's written approval. The College has the authority to reject key personnel assigned to the Project and have replaced any staff member of the Contractor or any of the Subcontractors for any non-discriminatory reason, including, but not limited to, safety violations, poor past performances, drug use, or inappropriate behavior.

#### **4.3 The Contractor's Supervision Of Contract Work/The Superintendent.**

The Contractor shall supervise and be responsible for the acts and omissions of the Contractor's employees, agents, Subcontractors, sub-subcontractors, suppliers and other persons performing portions of the Work and the Contract. The Contractor's designated Project superintendent shall be at the Project site at all times when Work is in progress. The Contractor may designate in writing an alternate superintendent who must be approved in writing by the College. The superintendent (or alternate) shall have full authority to represent and act for the Contractor at the site and shall have full authority to execute orders and directives of the College without delay.

Communications from the College or the Architect to the superintendent shall be deemed to have been given to the Contractor. The superintendent shall be capable of and authorized to respond to all hazardous and unsafe conditions at the Project site and to implement prompt corrective measures to eliminate all unsanitary, hazardous or dangerous conditions at the site. The College may suspend all or part of the Work at the Project site if the superintendent (or alternate) is not present at the Project site. Such a suspension shall not be the basis of a claim against the College, including without limitation any claim for additional time or extra cost.

The superintendent shall attend all meetings at the Project site including job meetings, scheduling meetings, and meetings with the College and/or the Architect. The superintendent shall have a written plan that must be approved in writing by the College for responding to emergencies when the Work is not in progress. The Contractor shall also utilize qualified competent craftsmen on the Project.

#### **4.4 Cooperation With The College And Other Contractors.**

The College reserves the right to contract for and perform other or additional work on or adjacent to the Project site. When separate contracts are let within the limits of the Project site, or in areas adjacent to the site, the Contractor shall perform its Work so as not to interfere with or



hinder the progress or completion of the work being performed by other contractors. The Contractor shall also affirmatively cooperate with such other contractors and coordinate its activities with theirs, and include coordination measures in the Project Schedule. The Contractor shall arrange its Work and shall place and dispose of materials being used so as not to interfere with the operation of other contractors within the limits of the Project site. The Contractor shall join its Work with that of the other contractors in an acceptable manner and shall perform its Work in proper sequence with that of other contractors.

If there is a disagreement as to the respective rights of the Contractor and others doing work within the limits of or adjacent to the Project site, the College shall determine the respective rights of the contractors involved to secure the satisfactory completion of all affected work. The Contractor shall not be entitled to additional compensation beyond its Contract Price that may arise because of inconvenience, delay, or loss experienced by it as a result of the presence and operations of other contractors working within the limits of or adjacent to the Project site.

The College reserves the right to occupy any portion of the Project that is ready for occupancy prior to Final Completion and acceptance of the Project, after Local and State Construction Enforcing Agency approval.

The occupancy of any portion of the Project does not constitute an acceptance of any Work nor does it waive the College's right to liquidated damages or constitute an acceptance of any Work, as the Project will be accepted as a whole and not in units. Prior to such occupancy, however, the Architect, a representative of the College, and the Contractor shall fully inspect the portions of the Project to be occupied, preparing a complete list of omissions of materials, faulty workmanship, or any items to be repaired, torn out or replaced. The College will assume responsibility for damage to premises so occupied of any items not on this list when such damage is due to greater than normal wear and tear, but does not assume responsibility for improper or defective workmanship or materials.

#### **4.5 Performance Of The College Directives.**

When the College issues a written directive to the Contractor under the authority of any provision in the Contract for Construction or these General Conditions, the Contractor shall perform as directed in a diligent manner and without delay. Compliance with written directives shall not adversely affect the rights of the Contractor under the Contract for Construction, these General Conditions or law, but if the Contractor objects to a directive of the College, or claims that a directive infringes upon its rights or entitles it to a change order, it shall notify the College in writing within 2 business days of any directive and describe any objection it has to the directive and the reasons for its objection. Objection to a written directive does not relieve the Contractor of the obligation to comply with the directive and proceed in a diligent manner to implement the directive without delay.



## **ARTICLE 5**

### **PERFORMANCE OF WORK**

#### **5.1 Protection Of Work/Materials.**

The Contractor, shall at its own expense, protect all finished Work and materials from damage and keep them protected until the Project is accepted as Substantially Completed, and shall repair or replace any Work or material damaged before acceptance. After the Project is accepted as Substantially Complete, the Contractor will remain responsible up through Final Completion for damage to Work and materials caused by it or its Subcontractors or others participating in the performance of its obligations under the Contract Documents. The Contractor shall also secure and protect its own tools, equipment, materials and supplies, and the College shall have no liability for damage, theft or injury to the Contractor's property.

#### **5.2 Safety And Safety Programs.**

The Contractor shall have full responsibility for safety at the Project site at all times up to Final Completion and acceptance of the Project and the Contract. The Contractor shall provide for the safety of all individuals on the Project site, and take measures to ensure that individuals on or near the Project site are not injured by the performance of the Contract. The Contractor shall establish and maintain a Project safety program in accordance with all applicable laws including OSHA, good industry practice, and any additional requirements in the Contract Documents. If the College or the Architect become aware of an unsafe situation, the Contractor will immediately respond to remedy the safety concern and shall take all other actions necessary to comply with Article 2.6.

#### **5.3 Emergencies Affecting Safety.**

If there is an emergency affecting the safety of persons or property, the Contractor shall take immediate action to prevent damage, injury or loss. The Contractor shall notify the College in writing of the situation and all actions being taken immediately or as soon as possible. If, in the opinion of the Contractor, immediate action is not required, the Contractor shall notify the College in writing of the emergency situation and proceed in accordance with the College's instructions. However, if loss, damage, injury or death occurs that could have been prevented by the Contractor's prompt and immediate action, the Contractor shall be liable for all costs, damages, claims, actions, suits, attorney's fees and other expenses that result.

Any additional compensation or extension of time claims by the Contractor on account of emergency Work shall be determined in accordance with the change provisions of the Contract for Construction and these General Conditions. The Contractor shall be responsible for emergencies and costs and delays resulting therefrom that could have been foreseen or prevented with normal diligence, planning, and supervision of the Work, or that are caused by the Contractor's failure to properly perform the Contract.

The Contractor shall provide the College with a list of the names and telephone numbers of its employees and employees of each Subcontractor designated to be contacted in case of an emergency during non-working hours. A copy of this list shall be displayed prominently at the



Project site so that it is visible when the Project site is secured and shall be provided to the College's campus police department.

#### **5.4 Working Hours.**

Except as required for the safety or protection of persons or property, or as specified in the Contract Documents, all Work at the site shall be performed during regular working hours, and not on Saturdays, Sundays, legal holidays, the College's commencement days, resident move-in and move-out days or other days specifically noted in the Contract Documents without the prior written consent of the College, which will not be unreasonably withheld.

#### **5.5 Site Security.**

The Contractor shall provide, maintain and oversee security at the site if required in the Specifications. The Project site shall be fenced as specified in the Specifications, and the Contractor shall control access when gates are unlocked or open. The fence shall provide a physical barrier to the site and protection from visible nuisance. At a minimum, the fence shall be firmly secured with buried posts or weighted feet, top rails, metal fabric, and locking gates. Contractor shall immediately notify the College in the event of unauthorized entry to the site.

#### **5.6 Site Use.**

The Contractor shall confine construction equipment, storage and Work to the Project site absent written approval from the College. Any request by the Contractor to use areas outside the Project site must be described in written form and included with the Contractor's bid.

#### **5.7 Building Access.**

The Contractor shall be responsible for the sign out, distribution, safe use and return of all building keys and/or access cards, and shall be responsible for all costs associated with failure to return these items (e.g., the cost to re-key/re-implement the system).

#### **5.8 Minimize Interruption.**

The Contractor acknowledges that the College is an existing educational facility and that classes may be in session during construction. The Contractor agrees to conduct its Work with as little disruption as reasonably possible to the College's students, faculty, employees and guests, and will maintain a safe environment for the College's students, faculty, employees and guests, in addition to the Contractor's employees and workers of all tiers. The Contractor and its Subcontractors and employees of all tiers must display courtesy and consideration with and shall refrain from discriminating against or harassing the College's students, faculty, employees, visitors and guests at all times. The Contractor will not allow smoking, vaping, alcohol, drugs, any firearms, or other weapons on the College's property at any time. The Contractor shall abide by all campus traffic regulations.



## **5.9 Submittals (Shop Drawings, Product Data, Samples).**

Prior to the beginning of Work on the Project, the Contractor shall furnish to the Architect and the College for their review and approval, a schedule setting forth all the submittals, including shop drawings, product data and samples required by the Contract Documents, that the Contractor intends to submit to the Architect for review and approval, the date upon which the Contractor shall make each such submittal and the date upon which the Architect shall complete its review of each such submittal, which in no event shall be less than ten (10) days from receipt ("Submittal Schedule"). The Architect and the College shall identify all submittals that will require more than ten (10) days to review and notify the Contractor of the required review period. The Contractor shall adjust the Submittal Schedule to accommodate the extended review period. The Architect shall endeavor to conduct its review and approval of all submittals in accordance with the Submittal Schedule. In the event that a submittal is made that is not set forth on the Submittal Schedule, the Architect shall review and return such submittal within ten (10) working days from receipt.

Submittals shall be complete as to quantities, details, dimensions and design criteria. The Architect will approve and the College will review submittals if they conform to the Contract Documents, the design concept and good industry practice. The Contractor shall note its approval of all submittals and the date for any submittals prepared by any Subcontractor or supplier, and it shall be responsible for determining and verifying all materials, field dimensions, field construction criteria, and coordination requirements pertaining to the submittal.

The Contractor will not be relieved of responsibility of deviations in submittals from the requirements in the Contract Documents by reason of approvals of the submittals unless the Contractor specifically identifies the deviation in the submittal and the Architect and the College expressly approve the deviation in writing. The Contractor shall be responsible for errors or omission in its submittals. No Work or materials included in a submittal shall begin until the submittal is approved by the Architect and the College.

## **5.10 Layout And Dimensional Control.**

The Contractor shall be responsible for locating and laying out the Project components and all of the Project parts on the Project site in strict accordance with the Plans, and shall accurately establish and maintain dimensional control. The Contractor shall employ a competent and licensed New Jersey engineer or land surveyor as appropriate to perform all layout Work and to fix the level and location of excavations, footing base plates, columns, walls, floors and roof lines. The Contractor shall furnish to the College and the Architect certifications that each such level is as required by the Plans as the Work progresses.

The plumb lines of vertical surfaces shall be tested and certified by the Contractor's engineer or surveyor as the Work proceeds. The engineer or surveyor shall establish all points, lines, elevations, grades and bench marks for the proper control and execution of the Work. The engineer or surveyor shall establish a single permanent benchmark to be approved by the Architect, to which all three coordinates of dimensional control can and shall be based. The engineer or surveyor shall verify all topographical and utility survey data, and all points, lines, elevations, grades and benchmarks furnished by the College.



Should any discrepancies be found between information in the Plans and the actual site or field conditions, the Contractor shall notify the Architect and the College in writing, and shall not proceed with any Work affected until it receives written instructions from the College.

The Contractor is required to provide a final “as built” survey from a New Jersey licensed/certified surveyor of the Project site showing all structures, elevations, grades and required information on the Project site and submit to the College in CADD format.

#### **5.11 Construction Access, Roads, Walks, And Parking.**

The Contractor shall keep all roadways, drives, walkways and parking areas within or near the site free and clear of debris, gravel, mud or any other site materials, including, for example, the cleaning of muddy wheels and undercarriages on vehicles before they exit the site. The Contractor shall be responsible for any citations, fines, or penalties imposed on it or the College for failing to comply with applicable local rules or laws regarding its use of roads and the like.

The Contractor shall obtain permission in writing from the College before using for construction purposes any existing driveways, parking areas, walkways or areas not specifically designated for such use in the Contract Documents. The Contractor shall maintain such driveways and areas in good and clean condition during construction and not damage them. At Final Completion, the Contractor shall leave them in the same condition as they were at the start of the Work. Conditions of such facilities before use shall be photographed and otherwise documented by the Contractor. The Contractor shall not commence construction of permanent driveways, parking areas or walks on the Project site without the written approval of the College.

Any existing walkways, driveways, aprons, or curbs damaged by the Work of the Contract Documents shall be replaced in kind, at the Contractor’s expense, immediately upon Project completion, or as required to maintain campus safety and campus aesthetics.

#### **5.12 Construction Site Condition, Storage, Dust Control.**

The Contractor shall provide reasonable, safe and orderly storage for its equipment, tools and materials, and shall not unreasonably encumber the site. The Contractor shall keep the site and the Project free from the accumulation of refuse, debris and scrap materials caused by its operations so that the site has a neat, orderly and workman-like appearance. Loading, cartage, hauling and dumping will be at the Contractor’s expense. The Contractor shall provide, at its expense, temporary dust-proof partitions around areas of work in existing buildings, and where reasonably required, in new building areas.

#### **5.13 Photographs.**

The Contractor shall provide, at its expense, monthly progress photographs of the Project. The photographs shall be 8 inches by 10 inches and shall be submitted to the College in duplicate monthly. Unless otherwise specified in the supplemental general requirements, four photographs



shall be submitted each month which provide views of the Project taken from the same four points each, which points shall be selected by the Architect.

#### **5.14 Project Sign.**

The Contractor shall, at its expense, provide, erect and maintain two Project signs at the site, which shall be described in the Contract Documents. The College will specify the location of the signs. The signs shall be painted by a professional sign painter or prepared by a professional graphic artist. No other signage will be permitted at the site. The signs shall include the name and cell phone number of a Contractor-designated project lead that is available for 24-hour contact in case of emergency. The Contractor shall remove the signs when the Project is finally accepted unless the College requests that they be removed earlier.

#### **5.15 Soil Conservation.**

The Contractor shall employ reasonable measures to conserve the soil at the site, and determine and comply with all soil conservation measures required by the Mercer County Soil Conservation District.

The Contractor shall coordinate and schedule all soil conservation inspections, shall provide the College with written notice of all such inspections so that the College may attend the inspections if it chooses in its sole discretion to do so, and shall provide the College with all site inspection notes, approvals or notices.

#### **5.16 Temporary Facilities, Services, Electric, Heat And Enclosures.**

The Contractor shall provide storage areas, temporary drives and sidewalks, employee parking areas, staging areas, excavation borrow/spoil areas, commercial canteen areas, field offices including a meeting room, telephones, toilet facilities, and other temporary facilities that are necessary to perform the Work or that may be required by the Project Specifications. The Contractor shall locate these facilities on the Project site, and the location shall be subject to the approval of the College.

The Contractor shall provide adequate and clean temporary toilet facilities on the Project site in locations to be approved by the College, and they shall be serviced at least twice a week by a firm qualified and experienced in such functions. The Contractor shall provide such temporary electricity, water, and other utilities that are necessary to perform the Work, or that may be required by the Project Specifications. The Contractor shall also supply such temporary enclosures and heat that are necessary to perform the Work or that may be required by the Project Specifications. The Contractor and the Subcontractors will not enter or use any College facilities not required by the Work of the Contract.

Temporary electric and heat shall be furnished by the Contractor for the benefit of other contractors working on the Project if specified in the Project Specifications.



The Contractor shall not anticipate using the permanent heating or air conditioning system in a building for temporary heat or air conditioning prior to the acceptance of the Project as Substantially Complete unless specified otherwise.

Any natural gas, combustible material, or hazardous material containers utilized by the Contractor must be stored in a safe, ventilated location approved by the College. The Contractor must also submit for approval a reasonable safety plan for the operation of temporary heat equipment. The Contractor shall be solely responsible for any natural gas, combustible material or hazardous materials containers utilized by the Contractor or any of its Subcontractors and shall indemnify, defend and hold harmless the College from any fines, costs, expenses, liabilities, damages, etc. resulting from the Contractor's or any of its Subcontractors' use of such materials.

#### **5.17 Substitutions.**

To the extent that the Contractor includes in its bid substitute materials or equipment or construction methods in lieu of those specified in the Contract Documents, it does so at its own risk. Any substitution must be equal in type, function and quality to the item required in the Contract. The Contractor must submit all information required within 20 days of the Contract award to determine if the proposed substitute is equal to the requirements of the Contract Documents, and any substitution must be approved in writing by the Architect and the College.

No substitution shall result in any increase in the Contract Price or Contract Times. The Contractor in its application for the substitution must certify in writing that the substitution is equal to what is specified in the Contract Documents in all material respects and will not increase the Contract Times or Contract Price of the Work. The College shall have sole discretion to determine whether a proposed substitution is equal to what is specified in the Contract Documents.

Should the substitution be rejected, the Contractor will then be required to provide the specified product, material or method at no additional cost to the College and no change in the Project Schedule.

#### **5.18 License Fees.**

The Contractor shall be responsible for obtaining the right to use any equipment, design, device or material required to perform the Contract, and shall include in its Contract Price any license fee or royalty required.

### **ARTICLE 6** **SUBCONTRACTORS**

#### **6.1 The Contractor's Responsibility For Subcontracted Work.**

The Contractor shall be fully responsible to the College for the proper performance of the Contract irrespective of whether the Work is performed by the Contractor's own forces or by Subcontractors employed by the Contractor. The Contractor shall be responsible for the acts and



omissions of its Subcontractors and suppliers on the Project and shall take appropriate measures if they are not properly supervising or performing their Work.

## **6.2 Subcontractor Identification And Approval.**

The Contractor shall have included with its bid for the Contract, the names, addresses and license numbers of all Subcontractors that it proposes to utilize on the Project for plumbing and gas fitting work, HVAC work, electrical work, structural steel and ornamental iron work. No Subcontractor may perform Work on the Project until it has been approved in writing by the College.

Within 20 days after issuance of the Notice to Proceed, the Contractor shall furnish to the Architect and the College in writing for review by the Architect and the College a list of the names of all Subcontractors, sub-subcontractors, fabricators, manufacturers, sources of supply, articles, devices, fixtures, pieces of equipment, materials and processes proposed for each item of Work using AIA Document G705-2001, List of Subcontractors. The Architect and the College will notify the Contractor in writing if either the College or the Architect, after due investigation, has reasonable objection to any names on such list.

In submitting the names of Subcontractors, the Contractor shall (1) list the name and address of the Subcontractor, (2) provide the name and address of all sub-subcontractors for each significant subdivision of the trade or work, and (3) reference in the form of a list at least 3 jobs similar in size and quality to the Project performed by the subcontractor in the last 5 years, with name and location of work, dollar value and names of the College and the Architect.

In submitting sources of supply, articles, devices, fixtures, piece of equipment and materials, including those under subcontracts and sub-subcontracts, the Contractor shall list (1) the name and address of the source of supply, and (2) the name of the manufacturer of the items.

If the College disapproves of a proposed Subcontractor, it will provide the reason for its decision in writing. The College will not be liable for any extra cost or delays caused by the reasonable disapproval of proposed Subcontractors. The approval of Subcontractors by the College shall not relieve the Contractor of the responsibility for complying with all of the provisions of the Contract Documents including those performed by the Subcontractors. Subcontractors approved by the College may not be changed without prior notice to and written approval by the College.

Payment to the Contractor shall not be made until the list of Subcontractors (as required above) has been provided to the Architect and College.

## **6.3 Subcontractor Qualifications.**

The College may disapprove of a proposed Subcontractor if (i) it has a reasonable objection to the Subcontractor, (ii) there is evidence of poor performance on other Projects or financial problems, (iii) the Subcontractor has been suspended or debarred by any public agency within the State of New Jersey, (iv) the Subcontractor is not properly licensed and registered to do business in New Jersey or with the New Jersey Department of Labor regarding prevailing



wages, or (v) the Subcontractor has been charged with or convicted of violating any laws, including but not limited to, the New Jersey Prevailing Wage Act, criminal laws, public procurement laws, anti-trust laws, election laws, laws against employment discrimination, environmental laws, tax laws, professional licensing laws, or laws regarding attempts to improperly influence the College or other public officials.

Subcontractors shall utilize qualified, competent craftsmen on the Project.

#### **6.4 Subcontractor Compliance With Contract/Subcontractor Supervisors.**

The Contractor shall require its Subcontractors on the Project to comply with all pertinent terms of the Contract Documents, and shall include all appropriate terms and provisions in written subcontracts on the Project to achieve proper Contract performance. Each Subcontractor shall have competent superintendents and foremen supervising their work, and the Contractor shall take appropriate measures if they fail to do so.

#### **6.5 No Contractual Relationship Between The College And Subcontractors.**

The Contractor shall enter into written subcontracts with each and every Subcontractor and supplier solely in its own name. No approval by the College of any Subcontractor or supplier and nothing in the Contract Documents shall create any contractual relationship or duties between the Contractor's Subcontractors and the College. Nothing in the Contract Documents shall cause any of the Contractor's Subcontractors or suppliers to be deemed a third- party beneficiary of the Contract between the College and the Contractor, and nothing herein shall give any of the Contractor's Subcontractors or suppliers any rights or claims directly against the College.

#### **6.6 Contingent Assignment of Subcontracts.**

Each subcontract agreement for a portion of the Work and any purchase order for materials or equipment may, in the College's sole discretion, be assigned by the Contractor to the College, provided that

- (a) assignment is effective only after termination of the Contract by the College for cause or for convenience and only for those subcontract agreements that the College accepts by notifying the Subcontractor and the Contractor in writing and only on such terms and conditions acceptable to the College;
- (b) assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract;
- (c) if the College elects to take an assignment of any subcontract or purchase order, the Contractor shall execute all papers necessary to effectuate the assignment; and
- (d) the assignment shall not relieve the Contractor of its existing obligations to any Subcontractor or Supplier, nor shall it cause the College to assume



any of the Contractor's obligations to any Subcontractor or Supplier that arose prior to the termination.

When the College accepts the assignment of a subcontract agreement or purchase order, the College assumes the Contractor's rights and obligations under the subcontract going forward. Upon such assignment to the College, the College may further assign the subcontract to a successor contractor or other entity.

## **ARTICLE 7**

### **TIME, LIQUIDATED DAMAGES, DELAY CLAIMS AGAINST THE COLLEGE.**

#### **7.1 Contract Times.**

The Contractor shall begin the Work within 10 days after the issuance of a Notice to Proceed by the College, and shall perform the Work in the Contract Documents by the dates specified in the Notice to Proceed, including Construction Start, Milestone, Substantial Completion and Final Completion Dates (collectively, "Contract Times"). As specified in the Contract for Construction, if the Work is to be performed in phases, the College may issue separate Notices to Proceed for each phase, which shall specify the Construction Start, Milestone, Substantial Completion and Final Completion Dates for that phase. The College may, in its sole discretion and at no cost to the College, choose to delay the issuance of a Notice to Proceed and the Construction Start Date for any phase until after the Contractor has achieved Substantial or Final Completion of any other phase.

#### **7.2 Liquidated Damages For Delay.**

If the Contractor fails to Substantially Complete any phase of the Work or the entire Work by the Substantial Completion Date(s) set forth in the applicable Notice to Proceed (as extended by Change Order, if applicable), and the delay is not excused by the College, then the Contractor shall pay the College the amounts specified in the Contract for Construction as liquidated damages for delay for each calendar day that the phase of the Work or the entire Work is not Substantially Completed beyond the applicable Substantial Completion Date

#### **7.3 Delay Claims By The Contractor Against The College -- Limitations.**

The Contractor may not assert claims against the College for extra compensation by reason of any delays in its Work resulting from acts or omissions of any third parties irrespective of extensions granted under the Contract, including but not limited to delays caused by third parties such as the Architect, other contractors, utilities and governmental authorities.

The College shall only be required to pay additional compensation for delays caused by the College itself and



shall not be liable for any period of delay when there is a concurrent delay for which the College is not responsible.

When the Contractor is entitled to extra compensation for delay under the Contract for Construction and these General Conditions, it can only assert claims for extra costs at the job site, and may not assert claims for extra costs for home office expenses, home office overhead, lost profit or revenue, or consequential losses as that term is defined by New Jersey law. Any additional compensation under this Article shall also be subject to the provisions in the Contract for Construction and these General Conditions regarding claims, and the provisions in the Contract for Construction and these General Conditions regarding the maintenance and availability of cost records.

## **ARTICLE 8**

### **PROJECT SCHEDULE**

#### **8.1 General Project Schedule Requirements.**

The Contractor shall schedule the construction Work and determine the most feasible means and order for the Work to complete the Project within the times required by the Contract. The Contractor shall prepare a Project Schedule and monthly schedule updates, which must be approved in writing by the College and the Architect. The Contractor shall perform the Contract and the Work in accordance with the Project Schedule. The Project Schedule should include a schedule of submittals for approval as required herein. The Project Schedule must be submitted before any Work (other than mobilization to site and general layout and site preparatory work) on the Project can begin under the Notice to Proceed. When the Contractor's Project Schedule is approved in writing by the College, it shall become an additional Contract Document and the Contractor shall be required by the Contract to comply with it. The Project Schedule and any updates to it shall be used in determining the amount of the monthly progress payments to the Contractor. The College may also use the Project Schedule and updates to determine if the Contractor is adequately planning and performing the Work in accordance with the Contract Documents.

#### **8.2 Form And Content Of Project Schedule.**

The Contractor shall prepare the Project Schedule using Critical Path Method (CPM) scheduling techniques. The Contractor shall utilize the latest revision of Primavera P3 or Microsoft Scheduling software. The Contractor shall prepare a detailed schedule which shows how it will plan, organize, execute and complete the Work. The Project Schedule shall be in the form of an activity oriented network diagram (CPM). The principles and definitions used in this Article shall be as set forth in the Associated General Contractors of America (AGC) publication "Construction Planning and Scheduling", copyright 1994.

The detailed network diagram shall provide sufficient detail and clarity of form and technique so that the Contractor can plan, schedule and control the Work properly, and the College and the Architect can readily monitor and follow the progress of all portions of the



Work. The network diagram shall comply with the limitations imposed by the scope of the Work and contractually specified Milestone, Substantial Completion, and Final Completion Dates. The Project Schedule shall include the arrow or network diagram and the computer produced schedule with dates. The Project Schedule shall include and reflect the following factors:

- (a) Project phasing, contract Milestone, Substantial and Final Completion Dates.
- (b) The structural breakdown of the Project.
- (c) The types of Work to be performed and the labor trades involved.
- (d) Reasonable logic and activity durations.
- (e) Reasonable coordination of all activities.
- (f) Purchase, manufacture and delivery activities for all major materials and equipment.
- (g) Deliveries of equipment furnished by the College.
- (h) Allowances for work by separate contractors identified in writing by the College at the time of Contract award.
- (i) Submittals and approvals of shop drawings, material samples, and other required submittals.
- (j) Subcontract Work.
- (k) Crew flows and sizes (manpower).
- (l) Assignment of responsibility for performing all activities.
- (m) Access and availability to Work areas.
- (n) Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, and sequences and interdependence of activities.
- (o) Testing and inspections.
- (p) Phased or total inspection, acceptance, and takeover by the College.
- (q) Utilization of the Project Schedule to determine amounts of monthly progress payments.
- (r) Activities required of the College and the Architect such as approvals, including reasonable durations for the activities.

Activities should be set forth in working days and have a maximum duration of 60 days, except for non-construction activities such as the procurement and delivery of materials and equipment. All durations shall be the result of definitive manpower and resource planning by the Contractor. The level of detail in the Project Schedule shall be subject to the approval of the College. The Project Schedule shall include a reasonable approach to achieve Milestone, Substantial Completion and Final Completion Dates in the Contract. Any failure of the Contractor to include any element of the Work in the Project Schedule shall not excuse the Contractor from completing that Work and all of the Work needed to complete the Project by the Milestone, Substantial Completion and Final Completion Dates in the Contract.

The network diagram is to be prepared by a computer plotter. The logic diagram will be pure logic and shall not be drawn to time scale. The logic diagram shall be drawn on 30" x 42" size sheets and prepared on a tracing/mylar or similar material suitable for reproducing high quality prints.



### **8.3 Computerization Of Project Schedule.**

The mathematical analysis of the detailed network diagram shall be made by computer, and the tabulation for each activity shall include the following:

- (a) Activity numbers.
- (b) Activity descriptions.
- (c) Durations in work days for each activity.
- (d) Earliest start date (by calendar date).
- (e) Earliest finish date (by calendar date).
- (f) Latest start date (by calendar date).
- (g) Latest finish date (by calendar date).
- (h) Slack or total float in work days.

The following computer documents shall be prepared as part of the initial Project Schedule submission and each update:

- (a) Activity file sort, including sorts listing activities required of the College and the Architect, such as approvals.
- (b) Eight week "lookahead" detailed bar chart.
- (c) Eight week summary bar chart.
- (d) Additional computer sorts requested by the College.
- (e) High density CDs or thumb drives of all computer files.

### **8.4 Weather Inclusion In Project Schedule.**

Seasonal weather conditions shall be included in the Project Schedule, including average precipitation, temperature and other weather conditions typical in the geographic area over a 5 year period by month.

### **8.5 Project Schedule Updates.**

The Contractor shall prepare Project Schedule updates monthly until the Project is completed. The first update shall be issued 30 calendar days after the Construction Start Date specified in the Notice to Proceed. Updates shall include the following information:

- (a) Actual start and completion dates for activities.
- (b) Activity percent completion.
- (c) Remaining durations for activities in progress.

Each Project Schedule update shall also include a narrative report that includes the following information:

- (a) Summary of Work completed during update period.
- (b) Comparison of actual progress and status to activities and dates in original Project Schedule.



- (c) Analysis of critical path including effect of activity progress on the Project critical path.
- (d) Analysis of secondary critical paths, meaning float within 10 days of the Project critical path.
- (e) Analysis of time lost or gained during the update period.
- (f) Identification of problem areas.
- (g) Identification of change orders and delays impacting or delaying the Project under the Project Schedule.
- (h) Solutions or proposed solutions to current problems and delays.
- (i) Extensions requested by the Contractor, including activities affected and the amounts, and the reasons for the requests.
- (j) Extensions granted by the College for delays and changes, including the activities affected and the amounts, and any effect on the critical path and Contract Milestone, Substantial Completion and Final Completion Dates.
- (k) Delays in activities required of the College and the Architect, and activities that they are required to complete in the update period following the issuance of the update.

All Project Schedule updates must be submitted to the College and the Architect for written approval. Project Schedule updates, including the reports which are approved by the College, shall be deemed to be official records of the progress and status of the Project under the Project Schedule and the Contract, and may be utilized by the College in determining if the Contractor is adequately planning and performing the Work under the Contract Documents.

#### **8.6 Meetings/Eight Week Bar Charts.**

The Contractor's Project Manager and Scheduler shall arrange for and attend monthly progress and scheduling meetings with the College and the Architect. Monthly progress meetings shall be scheduled 3 to 7 days after monthly Project Schedule updates and reports are issued and provided to the College and the Architect. The purpose of these meetings will be to review past progress, current status, problem areas, delays, measures to reduce delays, future progress, and the Contractor's most recent Project Schedule update and report. At the monthly progress meetings, the Contractor shall provide a look ahead summary and detailed bar charts showing the Work and activities to be performed and/or completed during the 8-week period following the Project Schedule update.

#### **8.7 Project Schedule Documentation For Contract Payments.**

The Contractor will not be entitled to payments under the Contract until a Project Schedule has been submitted to and approved in writing by the College. No payment will be made under the Contract if, when the payment is due, a Project Schedule update and narrative report is due under this Article but has not been submitted to and approved in writing by the College. The original Project Schedule shall include a breakdown allocating the total Contract Price among the network activities in the Project Schedule, which must be approved by the College.



## **8.8 Progress and Recovery Project Schedules.**

The Contractor shall perform its Work in accordance with the Project Schedule. If the Contractor's Work falls behind the requirements of the Project Schedule, it shall, at its own cost, institute measures to improve its progress and bring its Work in compliance with the Project Schedule, including but not limited to increasing manpower, increasing work hours per shift, increasing shifts, increasing working days per week, and rescheduling Work activities to perform them concurrently where feasible.

If monthly Project Schedule updates show that the Contractor's progress has fallen behind the Project Schedule so as to jeopardize the achievement of Milestone, Substantial Completion or Final Completion Dates by more than 10 work days, the Contractor shall, if requested by the College in writing, prepare a recovery schedule with acceleration measures to regain the lost time, and shall proceed in accordance with the recovery schedule in addition to the Project Schedule at its own cost.

## **8.9 The Contractor's Failure to Provide Project Schedule Updates.**

If the Contractor fails to provide monthly Project Schedule updates and reports when required, the College can elect in its sole discretion to employ any of the following remedies: (i) not make progress payments; (ii) on 10 days written notice to the Contractor, retain its own consultant to provide Project Schedule updates and reports and deduct the cost from the Contract Price; (iii) terminate the Contract for default in accordance with the termination provisions in the Contract for Construction and these General Conditions and/or (iv) make a claim on the performance bond.

## **8.10 Scheduler Qualifications.**

The Contractor must utilize a Project Scheduler that satisfies the qualification requirements for the Project. If at any time during the Project it appears that the Contractor's Project Scheduler is not competent to provide the scheduling services required in this Article, the Contractor shall, within 10 days after a written notice and demand from the College, retain a replacement scheduler that is competent to provide the services required. The College may also utilize any of the remedies provided in the Contract for Construction or these General Conditions for the Contractor's failure to provide proper Project Schedule updates and reports.

# **ARTICLE 9**

## **EXTENSIONS, COMPENSATION FOR CERTAIN EXTENSIONS.**

### **9.1 Delays Warranting Extensions Of Contract Times.**

If the Contractor is unavoidably prevented from completing any part of the Work within the Milestone, Substantial Completion or Final Completion Dates by causes beyond the control and without the fault of the Contractor or its Subcontractors, those Contract Times will be extended by amounts equal to the time lost due to such delays, provided the Contractor requests extensions in accordance with this Article. Delays warranting extensions of the Contract Times



include unforeseeable and unavoidable delays caused by the College, the Architect, other contractors employed by the College, utility owners or other third parties, acts of God, acts of governmental authorities, wars, abnormally severe weather conditions of unusual duration (specifically excluding weather conditions of the type and duration that have been encountered in the area in which the Project is located) that prevent timely delivery of materials or equipment necessary to the completion of portions of the Work or hamper access to the Work by workmen or Subcontractors, fires, floods, earthquakes, epidemics, plagues, and other unavoidable casualties.

Except for the conditions described in Article 7.3, apart from an extension of time, no payment or allowance of any kind shall be made to the Contractor as compensation for damages on account of hindrance or delay from any cause in the progress of the Work, whether such delay be avoidable or unavoidable. The Contractor agrees that it will make no claim for compensation, damages for any such delays, and will accept in full satisfaction for such delays said extension of time.

## **9.2 Weather Delays.**

The Project Schedule shall take into account normally anticipatable adverse weather plus an additional five (5) days of severe and unusual weather conditions that will materially interfere with the timely prosecution of the Work. No time extensions will be granted for time lost due to weather conditions that do not meet the criteria set forth in Article 9.1, and then only to the extent more than five (5) days of delay result from such severe and unusual weather conditions. Owner shall not be required to keep a record of days of precipitation or low temperatures and the burden of proof with respect to weather delays shall be upon Contractor. No time extensions will be considered for any weather conditions that do not affect Work on the critical path or Contract Times.

## **9.3 Float Time Use.**

Float time in the Project Schedule is not for the exclusive use of either the Contractor or the College. Float time is available for use by both parties to facilitate the effective use of available resources and to minimize the impact of problems and delays that may arise during construction. No time extension will be granted as a result of any problem, change order or delay which only results in the loss of available positive float on the Project Schedule. Float time shown on the Project Schedule shall not be used by the Contractor in a manner that is detrimental to the interests of the College or the Project.

## **9.4 Calculation Of Extensions.**

Extensions will be calculated based on the effect of delays on the Project Schedule and the activities in the Project Schedule. If the Contractor is entitled to an extension for a delay based on the nature of the delay under this Article, the activities in the Project Schedule affected by the delay will be extended by the amount they are affected. If extensions of activities in the Project Schedule affect the critical path and delay the Contract Milestone, Substantial Completion or Final Completion Dates, they too will be extended to the extent affected. The critical path and Contract Times will only be extended to the extent that they are actually



affected under the Project Schedule by a delay for which the Contractor is entitled to an extension.

If, for any scheduled activity or period, there are concurrent delays that include delays for which the Contractor is entitled to an extension and delays for which the Contractor is not entitled to an extension, the Contractor will be given an extension for the delays for which it is entitled to extension so that it will not be liable to pay liquidated damages for delay, unless the College eliminates or reduces that delay. A concurrent delay will not justify an extension to the Contractor if it has minimal effect on the completion of the Project, and/or if it would likely have been avoided if it had become apparent that it was having an effect on the progress of the Project and the Final Completion Date.

#### **9.5 Elimination of Delays and Extensions (Acceleration).**

If the effect of a delay for which the Contractor is entitled to an extension can be reduced or eliminated by changes in the Project Schedule or other measures which have no material adverse impact on the Contractor in terms of cost or otherwise, the Contractor shall employ those measures so that no extension is required or so that a shorter extension is required. If the Contractor is entitled to extensions for delays, and if the College (in its sole discretion) notifies the Contractor in writing that it prefers to eliminate the lost time to avoid or reduce the extension required, by changes or additional efforts such as acceleration efforts, the Contractor shall perform those measures as a change to the Contract to be compensated under the change order provisions in the Contract for Construction and these General Conditions.

#### **9.6 Requests For Extensions Required.**

The Contractor must provide the College with a written notice of delay and request for an extension within 24 hours of the beginning of a delay. The written notice of delay and request for extension must include the nature and cause of the delay, the known extent of the delay, the Work activities on the Project Schedule affected by the delay, and the extent of the effect to each, and suggestions or proposals to reduce or eliminate the delay. This limited time frame is to provide the College the opportunity to immediately address the issue and limit the amount of time in the potential delay and its potential impact on the Project Schedule.

9.7 SECTION WAS DELETED



**ARTICLE 10**  
**PAYMENTS TO THE CONTRACTOR.**

**10.1 Contract Price.**

The College will pay the Contractor as full compensation for performing the Work the Contract Price as adjusted by approved change orders that increase or decrease the Contract Price. The College will do so in accordance with this Article, any supplemental General Conditions regarding payment, and the payment terms in the Contract for Construction. Payment provisions in the supplemental General Conditions that add to or modify this Article shall take precedence over this Article. Payment provisions in the Contract for Construction that add to or modify payment terms shall take precedence over the supplemental General Conditions and this Article.

**10.2 Monthly Progress Payments.**

The College will pay the Contractor monthly progress payments as the Work proceeds and will pay for the Work completed, less retainage. The Contractor shall submit monthly invoices using the College's invoice form for the Work completed in each calendar month, and the monthly invoice shall be submitted in accordance with the Contract. The Contractor shall be entitled to monthly progress payments based on the percentage of the Work completed (less earlier payments), and that amount shall be based on the Unit Schedule Breakdown and the update of the Project Schedule for the billing period showing schedule activities completed and progress on incomplete activities, in conjunction with the values assigned to those activities. If there is a discrepancy between the amount due based on the Unit Schedule Breakdown and the amount due based on the Project Schedule update, the Contractor shall only be entitled to the lesser amount unless the College's Representative, in his/her sole discretion, decides otherwise. Payments made by the College shall be used by the Contractor solely for purposes of this Project and for paying Subcontractors, suppliers, and for labor and materials, and shall not be used to pay debts owed by the Contractor outside of the Project.



### **10.3 Unit Schedule Breakdown/CPM Activity Price Breakdown.**

Before the Contract for Construction is signed, the Contractor shall submit to the College and the Architect a Unit Schedule Breakdown (schedule of values) utilizing the College's form (AIA Documents G702/G703) which reasonably allocates the Contract Price among the principal categories of Work and materials in the Contract. The Unit Schedule Breakdown must be signed by the Contractor and is subject to written approval by the Architect and the College for use in calculating monthly progress payments under the Contract. The Contractor shall not "front end load" the Unit Schedule Breakdown. The Unit Schedule Breakdown may include line items for mobilization, bonds and insurance.

The Contractor's proposed Project Schedule shall reasonably allocate the Contract Price among the activities in the schedule so that monthly Project Schedule updates can be utilized in connection with the Unit Schedule Breakdown in determining the amount of monthly progress payments. The Contractor's Unit Schedule Breakdown and Project Schedule activity price breakdown must be approved in writing by the Architect and the College before any payments are made under the Contract.

### **10.4 Invoices For Monthly Progress Payments: Form and Content.**

The Contractor must utilize the College's invoice form and the invoice forms (AIA Documents G702/G703 and waiver attachments) must be completed before they are submitted for payment. Each invoice must be signed by the Contractor, and shall certify that the Work and materials represented as having been provided have been provided, and that all Subcontractors and suppliers on the Project have been paid all amounts legitimately due for Work and materials billed to the College in earlier invoices that were paid by the College. The Contractor's submission of an invoice constitutes an affirmative representation and warranty by the Contractor that it performed the Work in compliance with the Contract Documents and applicable laws, codes and regulations.

Invoices for monthly Project payments must include the status of the Work in the Unit Schedule Breakdown and the Project Schedule update for the billing period that shows the activities completed or started and the value of them based on the Project Schedule. Invoices must also include certified payrolls for the Contractor and all Subcontractors for the billing period, affirmative action monthly manning reports, a certification of Subcontractor/supplier payments, the College's acknowledgment of progress payment and release of liens and claims form duly executed by the Contractor, the College's acknowledgment of progress payment and release of liens and claims form duly executed by each Subcontractor and supplier who has furnished labor or materials that are the subject of the current invoice, a list of all materials stored to date including descriptions, values, quantities and location, and any other documents required in the Contract Documents.

The Contractor will be entitled to have an invoice paid if the Architect and the College approve in writing the invoice including the percentage of Work completed, and if the quality of the Work and materials conform to the Contract Documents. The approval of invoices shall not waive claims for defects or deficiencies in the Work or materials provided, or the right to subsequently inspect the Project as a complete and functioning whole.



### **10.5 Payment For Materials And Equipment Procured But Not Installed.**

The Contractor may seek payment in monthly invoices for materials and equipment delivered to the Project site but not yet incorporated into the Work. The Contractor shall include with its monthly invoices a list of the stored equipment, the amount and type of stored materials, and the place where they are stored. Each invoice that seeks payment for materials and equipment delivered to the Project site but not installed or incorporated into the Work shall include a signed bill of sale to the College and an invoice from the supplier. All risk of loss or damage for materials and equipment delivered to the Project site shall remain with the Contractor.

The College will only rarely pay for material or equipment stored offsite, and only when it determines, in its sole discretion, that there is good cause. The College will consider no request to pay for materials or equipment stored off site unless the Contractor includes a written request for such payment with its bid for the Project. If the College does agree to pay for material or equipment stored offsite during the performance of the Contract, it will do so when the Contract for Construction is signed.

If the College does agree to pay for materials and equipment stored offsite, such payments shall be subject to any conditions in the signed Contract, and in all cases, a bill of sale to the College, a paid invoice, insurance and proof the storage facility is bonded will have to be provided to the College when each payment is sought. The location will have to be specified in writing and the material or equipment will have to be inspected by the College. The Contractor and its performance bond surety must agree in writing that they retain all risk of loss or damage, and each payment application must contain a consent to payments for materials stored offsite signed by the Contractor's bonding company.

Payments on account of materials or equipment not incorporated into the Work but delivered and suitably stored at the site, or at some other location agreed upon in writing, may be made by the College subject to the following conditions:

- (a) Such materials or equipment shall have been fabricated or assembled specifically for the Project and delivered to storage no earlier than needed for the orderly progress of the Work as demonstrated by the Project Schedule.
- (b) Title to such materials or equipment shall pass to the College pursuant to the Contractor's bill of sale, which shall contain guarantee of replacement thereof in the event of damage thereto or disappearance thereof due to any cause. The Contractor shall also affirm that it will pay for such materials or equipment immediately upon receipt of payment therefore from the College.

In the case of offsite storage, the Contractor shall also provide Consent of Surety to such payment and insurance of such materials or equipment against the perils set forth in these General Conditions both while storage and during transportation to the site. Raw materials or other materials or equipment readily duplicated or usable on other projects will be paid for only



after the materials are incorporated into the construction.

#### **10.6 Retainage.**

The College will retain 2% of the amount due on each partial payment pending Final Completion of the Contract.

Retainage amounts being withheld by the College shall be released and paid in full to the Contractor within 45 days of the Final Completion Date agreed upon by the Contractor and the College, without further withholding of any amounts for any purpose whatsoever, provided that the Work has been Finally Completed as indicated.

#### **10.7 Payment For Change Order Work.**

The Contractor shall invoice for change order work in the monthly progress payment invoices as the change order work is performed, but may only do so after a written change order has been signed by the appropriate College personnel and a TCNJ Purchase Order is issued by the College.

#### **10.8 Final Payment.**

Upon Final Completion of all the Work including all change orders, upon final acceptance of the Work by the Architect and the College, and upon the issuance of the Certificate of Final Completion, the Contractor will be paid the fully adjusted Contract Price including any retainage. The Contractor shall submit an invoice for the final payment. The final invoice must be accompanied by the College's acceptance of final payment and release of liens and claims form duly executed by the Contractor, the College's acceptance of final payment and release of liens and claims form duly executed by each Subcontractor and supplier who has furnished labor or materials that are the subject of the final invoice, all warranties, guarantees, manufacturer literature, approved as-built drawings, shop drawings required, and any other documents that the Contractor is required by the Contract Documents to provide to the College at the time of Final Completion. The final invoice must also include a written signed consent to the final payment signed by the Contractor's bonding company.

#### **10.9 Payment Terms.**

All invoices and payments shall be subject to the terms of the Contract for Construction and these General Conditions, including the provisions regarding payments, and to the right of the College to withhold payments or to make deductions from payments for damages, defective work, liquidated damages, third-party claims, failure to complete Work, failure to comply with requirements of the Contract Documents, failure to comply with Prevailing Wage Act requirements set forth in the Contract for Construction and these General Conditions, failure to comply with Project Schedule obligations, or other causes authorized by the Contract Documents.



#### **10.10 Payment Based On Partial Acceptance (Limitation).**

The College will not accept portions of the Project as Substantially or Finally Complete unless specified elsewhere in the Contract Documents. If the Specifications authorize partial acceptances, they will also specify the terms and conditions of such acceptances.

#### **10.11 Failure To Pay Amounts In Dispute Not To Affect Performance.**

The failure of the College to pay any amount requested by the Contractor in an invoice based on a determination that the invoice is improper or some other dispute shall not entitle the Contractor to stop or slow down the performance of the Work.

#### **10.12 Reasons For Withholding Payment.**

In addition to the reasons set forth elsewhere in the Contract for Construction and these General Conditions, the Architect or the College may also withhold payments to the Contractor, or, because of subsequently discovered evidence, may nullify the whole or a part of a payments previously issued to the Contractor, to such extent as may be necessary in the Architect's or the College's opinion to protect the College from loss for which the Contractor is responsible because of

- (a) defective Work not remedied;
- (b) third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the College is provided by the Contractor;
- (c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- (d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
- (e) damage to the College or a separate contractor;
- (f) failure to comply with requirements for monthly progress payments pursuant to Article 10.4; or
- (g) failure to carry out the Work in accordance with the Contract Documents.

When the above reasons for withholding payment are removed, payment will be made for amounts previously withheld.

If the College withholds or the Architect recommends that the College should withhold payment from the Contractor under subsection (c) above, the College may, after providing the Contractor with written notice and an opportunity to cure, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. However, by doing so, the College is not undertaking any payment obligation on the part of the



Contractor, nor does any Subcontractor have any claims against the College or any right to future joint check payments.

#### **10.13 Set-Off For State Tax Indebtedness.**

Pursuant to N.J.S.A. 54:49-19, and notwithstanding any other provision of law to the contrary, if the Contractor or any of its Subcontractors or suppliers are indebted to the State of New Jersey for any State tax, the College may withhold and/or set off any payments due to the Contractor as may be necessary to satisfy such indebtedness and/or pending resolution of the indebtedness.

#### **10.14 Maintenance Of Cost And Accounting Records.**

The Contractor shall maintain and retain weekly payroll, material, Subcontractor, supplier, overhead and other cost and accounting records for the Project, and for additional services or extras required by the College, including all costs that the Contractor is entitled to be paid under the Contract. The Contractor shall require its Subcontractors on the Project to do likewise. The Contractor shall also maintain all estimates and takeoffs used in preparing and calculating its bid price for the Contract and change orders. The Contractor shall also maintain all documentation related to products, transactions or services under the Contract. The records shall be maintained and shall be made available to the College or its representatives when requested. These records shall be maintained in accordance with generally accepted accounting principles and practices for a period of 5 years after final payment is received by the Contractor, or the duration of any dispute or lawsuit arising out of the Project, whichever is later, and shall be made available to the College or its representatives and the New Jersey Office of the State Comptroller when requested.

Any failure to maintain or produce the records required by this Article may limit the Contractor from being paid on any claims that are based on costs and expenses or losses incurred by the Contractor or its Subcontractors including extra costs that are or that should be reflected in the records required by this Article or good business practices. This record keeping requirement applies to records related to the basic Contract Price as well as extra compensation for change orders and claims of all kinds.

No claim by the Contractor against the College for payment, whether for Contract Work, extras, changes or claims that is based to any degree on costs that should be recorded in cost records required by this Article or good business practices may be asserted against the College to the extent the cost records do not exist or are not provided to the College upon demand.

The College reserves the right to audit the records of the Contractor and its Subcontractors at any time and for up to 3 years after the Final Completion of the Project. If an audit reveals overpayment by the College, the Contractor shall refund the cost of the audit and the overpayment to the College, or the College may deduct the cost of the audit and the overpayment from future payments under the Contract, or the College may assert claims against the Contractor and/or its surety for the cost of the audit and such overpayments.



### **10.15 Written Evidence of Payment to Subcontractors.**

The College has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers' amounts paid by the College to the Contractor for subcontracted Work. Such evidence shall include acknowledgment of progress payment and release of liens and claims forms duly executed by each Subcontractor and supplier for payments previously made to the Contractor. If the Contractor fails to furnish the College with the written evidence that it has properly paid Subcontractors and material and equipment suppliers, the College shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the College nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law. The College may, in its sole discretion, issue checks made payable jointly to the Contractor and a Subcontractor; however, by doing so, the College is not undertaking any obligation on the part of the Contractor, nor does the Subcontractor have any claims against the College nor any right to future joint check payments.

## **ARTICLE 11** **CHANGES.**

### **11.1 Changes Authorized.**

The College may at any time authorize and direct changes in the Work or accelerations of the Work that change the scope of the Work and that increase or decrease the Contract Price. All changes including changes in the Contract Price shall be governed by this Article. All changes must be in a written change order signed by the Vice President for Administration, the College's Representative, the Architect and the Contractor. A TCNJ Purchase Order will then be issued by the College and signed by the Contracting Officer, after which time, the Contractor can then bill for the completed change order Work. Any extensions in the Contract Times and increases in the Contract Price because of extensions resulting from changes shall be governed by Article 9 of these General Conditions regarding extensions, but the authorization for the extra compensation itself resulting from an extension must be contained in a change order that complies with this Article as well. The College may elect to have changed Work on the Project that is within the scope of the Contract Documents performed by another contractor. Changes in the Work shall not affect the surety bond protection or insurance coverage required by the Contract Documents.

### **11.2 Change Request Or Directive.**

The College may request a change in the Work or materials to be provided under the Contract Documents by a written Contract Change Directive ("CCD") signed by the College's Representative. If the College is of the opinion that no change in the Contract Price or Contract Times is required because of the change request, it shall so state in the CCD. A CCD may include provisions regarding the scope of the changed Work or materials, and may also include conditions including time parameters. A CCD may provide that specified Work shall stop until further notice, but the Contractor shall not stop or delay any Work because of a CCD unless the CCD provides that Work should stop because of the change. A CCD may provide that the performance of changes shall not commence until a change order is issued and a subsequent



TCNJ Purchase Order is issued and signed by the Contracting Officer, or that changed Work should proceed before a change order and TCNJ Purchase Order are issued by the College to maintain the progress of the Project.

### **11.3 Change Orders Which Are Protested.**

If the Contractor protests the terms of a change order, it shall notify the College of its protest in writing within 2 business days of the issuance of the Change Order. It shall describe the terms that it objects to and the reasons for its protest. It shall include supporting documentation if appropriate, including detailed justification for any Contractor requested additional compensation based upon unavoidable additional costs. The College may elect to direct the Contractor in writing to perform the change order requirements despite the protest. If it does so, the Contractor's right to pursue further relief based on the protest shall be preserved and the Contractor shall immediately proceed with the change Work

### **11.4 Changes Affecting Contract Times.**

Changes and change orders shall not affect or extend any of the Contract Times unless the change order itself specifies that it changes Contract Times. If a change order issued by the College delays the completion of any activity in the Project Schedule, the time allowed for that activity shall be extended, and if a delay in that activity delays other activities, the critical path or the Completion Dates in the Contract, they too will be extended. The Contractor shall make reasonable efforts in scheduling changed Work so that it does not delay or extend activities in the Project Schedule critical path, including any Milestone Dates, the Substantial Completion Date and the Final Completion Date. The Contractor shall also make alternate proposals for change order Work that include acceleration for the changed Work where feasible to achieve this goal, and shall include the cost of such efforts in its change order requests and proposals.

Change orders must specify whether they result in any delay (or extension) to any critical path activities in the Project Schedule, including an identification of the activities and the amount of delay in each. If no delay or extension is set forth in a change order, it will be deemed an agreement by the College and the Contractor that no delay or extension results from the change order.

### **11.5 Contractor Initiated Change Order Requests.**

If the Contractor contends that any directive or communication from the College or Architect, or any condition, event or circumstance entitles it to a change order changing the scope of the Work, terms of the Contract Documents, Contract Price or Contract Times, it shall submit a written change order request to the College's Representative within 5 days of the event upon which the request is based. The written request shall specify the terms of the change order requested, and include all documentation and information that the Contractor seeks to have considered in support of the request, or that is necessary to a proper consideration of the request.



## **11.6 Change Order Amounts.**

All price changes or amounts in change orders shall be based on (i) lump sum, (ii) actual work time and materials plus mark-ups for overhead and profit, or (iii) unit prices times actual quantities that may or may not include separate mark-ups for overhead and profit. If a change order price is to be based on a lump sum price or a unit price, the College may request the submission of such documentation regarding market price or cost which it reasonably deems necessary to determine a lump sum or unit price. If a change order is based on actual work time and material costs, it will include a not-to-exceed price.

Applications for payment for change order Work shall be included in monthly progress payment invoices as the change order work is performed, but only after a TCNJ Purchase Order has been issued to the Contractor by the College. For change orders based on time and material costs or unit prices times actual quantities, the time spent, material provided, and quantities performed shall be recorded in daily time slips, material invoices, and quantity of work performed tickets that are signed by the College's Representative to certify that the Work and materials were provided, and the quantities. Labor costs and material costs for change orders shall be based on actual costs to the Contractor without any mark-ups except as provided in this Article.

Mark-ups may be added to time and material costs where a change order is authorized to be paid on a time and material basis, and also unit price change orders if the change order price term expressly authorizes mark-ups as a separate additional charge to be added to the unit price. When mark-ups for overhead and profit are authorized, the standard mark-up for overhead and profit shall be 15% of net costs properly invoiced in the change order. The schedule for mark ups is as follows:

- 15% of direct costs for overhead, profit, bond, and insurance for Work performed directly by the Contractor;
- 15% of direct costs for overhead, profit, bond, and insurance for Work performed directly by the Subcontractor and 5% of the direct and indirect costs of the Work performed by the Subcontractor for the Contractor; and
- 15% of direct costs for overhead, profit, bond, and insurance for Work performed directly by the Subcontractor's subcontractor and 5% of the direct and indirect costs of the Work performed by the Subcontractor's subcontractor for the Subcontractor and 5% of the direct and indirect costs of the Work performed by the Subcontractor for the Contractor.

There shall be no additional mark-ups for materials or supplies. Bond and insurance costs are included in the noted mark ups above. Refer to Division 1 Specifications also for further delineation of items included in mark-ups.

**THE CONTRACTOR MUST USE THE COLLEGE'S CHANGE ORDER FORM INCLUDED IN THE PAYMENT PROCEDURE DOCUMENTS.**



### **11.7 Right To Audit Extra Costs (Before And After Payment).**

The College reserves the right to audit all change orders and additional costs claimed and/or paid under the Contract at any time. The obligation of the Contractor, Subcontractors and suppliers to establish, maintain and produce cost records and remedies for failing to do as specified elsewhere in these General Conditions and the Contract for Construction shall govern. If an audit reveals that actual costs invoiced to the College and/or paid by the College in change orders exceed the actual costs incurred, the Contractor shall refund the excess, or the College may deduct the excess from future payments under the Contract, or the College may assert claims against the Contractor and/or its surety for such overpayments.

### **11.8 Change Orders With Both Price Increases and Decreases.**

If a change order reduces the scope of the Work or materials to be provided by the Contractor under the Contract, the change order shall provide for a reduction in the Contract Price in the amount of the actual reduction in cost. If a change order results in both added costs and reduced costs, they shall be combined for a net plus or minus Contract Price adjustment, and when mark-ups are applicable, they shall only be added to a net increase in the Contract Price which results from a combination of additions and deductions in the change order.

### **11.9 Waiver Of Rights In Connection With Change Orders Issued Without Protest.**

The Contractor shall not be entitled to seek any additional compensation or any extension of the Contract Times beyond the amounts and any extensions included in a change order signed by the College or a written change order request submitted by the Contractor to the College for approval, the intent being that the Contractor must disclose all additional costs and delays claimed to result from a change so that the College can take measures in considering the change to effect cost savings and avoid delays. The failure to include extra costs or delays in a change order request will preclude the Contractor from later claiming such costs or delays in connection with the change in any form or fashion.

## **ARTICLE 12** **COMPLETION.**

### **12.1 Substantial Completion.**

When the Contractor believes that the Project (or a specific phase of the Work, if the Work is to be performed in phases) is Substantially Complete, meaning all essential requirements of the Work have been sufficiently completed so that the Project (or a specific phase) can be occupied and used for its intended purpose (and as further defined in the College's Division 1 specifications for capital projects), it can make a written request to the Architect and the College to conduct an inspection and to issue a Certificate of Substantial Completion. The Contractor's request shall list all Work and requirements of the Contract Documents that remain to be completed or corrected and an estimate of the value of the incomplete items and the dates by which those items of the Work will be completed, but in no event shall it be more than thirty (30) days from Substantial Completion.



The Architect and the College will conduct an inspection, and if they determine the Contractor has Substantially Completed the Project (or a specific phase of the Work, if the Work is to be performed in phases), the College will issue a Certificate of Substantial Completion. If the Architect and the College determine that the Contractor has not achieved Substantial Completion, the College will notify the Contractor in writing and will list the Work and requirements of the Contract Documents that must be completed for Substantial Completion and provide a punch list. The Architect and the College will also assign a value to the incomplete items to be added to the 2% retainage held after the Certificate of Substantial Completion is issued. The College and the Architect will re-inspect when the Contractor notifies them in writing that those items have been completed.

Any failure of the College or Architect to include incomplete or deficient items in a Certificate of Substantial Completion or a notice regarding a Substantial Completion inspection shall not affect the Contractor's obligation to properly complete all requirements of the Contract.

The College will not issue a Certificate of Substantial Completion unless it can occupy and use the Project (or the phase of the Work) for its intended purpose, and the Contractor agrees that the College's use and occupancy of the Project (or the phase of the Work) shall not affect the Contractor's obligation to complete the Project and requirements of the Contract Documents. The Contractor also agrees that its completion of the Project will not unreasonably interfere with the College's occupancy and use of the Project (or the phase of the Work) and that the College's occupancy will not impede the Contractor's completion of the Work to Final Completion.

Unless otherwise specified in the supplemental General Conditions, a Certificate of Substantial Completion will not be issued unless an unqualified temporary or permanent certificate of occupancy is issued, and the College is able to use and occupy the Project (or the phase of the Work) without interruption.

The issuance of a Certificate of Substantial Completion shall not void or alter any of the other terms of the Contract Documents, including but not limited to terms relating to warranties, or relieve the Contractor of its obligation to complete the Work or remedy defective Work or materials, unless such terms are expressly modified by the Certificate of Substantial Completion.

Guarantee periods for equipment, workmanship and materials shall commence when the Certificate of Substantial Completion is issued or from the completion and acceptance of equipment, workmanship or materials, whichever is later, unless otherwise specified in the supplemental General Conditions or the Certificate of Substantial Completion.

The rights of the Contractor regarding payments upon the issuance of the Certificate of Substantial Completion shall be as provided in the payment provisions of the Contract for Construction and these General Conditions.

## **12.2 Final Completion.**

The Contractor shall notify the Architect and the College in writing when it has completed the entire Project (or a specific phase of the Work, if the Work is to be performed in



phases) and has satisfied all of the requirements of the Contract Documents for Final Completion. The Architect and the College will then conduct an inspection, and if they determine that the Contractor has completed the entire Project (or a specific phase of the Work, if the Work is to be performed in phases) and has satisfied all of the requirements of the Contract Documents for Final Completion, the College will then issue a Certificate of Final Completion. If any items remain incomplete or unsatisfactory, the College will notify the Contractor in writing and list the incomplete or unsatisfactory items. The Contractor shall immediately complete and correct any unfinished items and notify the Architect and the College in writing and request a follow-up inspection for Final Completion.

The Certificate of Final Completion will not be issued until all documents required by the Contract Documents have been provided, including the College's acceptance of final payment and release of liens and claims forms duly executed by the Contractor and any Subcontractors and suppliers who have furnished labor or materials under the Contract, warranties, maintenance and operating instructions, certificates, insurance, shop drawings required, and as-built drawings approved by the Architect. Final Completion must include leaving the entire Project site and the Project (or the phase of the Work) clean, neat and orderly. All distortions, cracks, delaminating and deteriorations of finished surfaces must be remedied. All broken items shall be repaired. All paint spots, stains and plaster must be removed. All unused equipment and excess material shall be removed. The Project and the Project site (or the phase of the Work) shall be clean and finished.

If the Contractor unreasonably delays completing and correcting items needed for the issuance of the Certificate of Final Completion, the College may unilaterally issue a Certificate of Final Completion that lists incomplete and defective items, and that deducts any applicable liquidated damages and the cost of remedying incomplete and defective items from the final amount due to the Contractor under the Contract.

Final payment will not be made until the Certificate of Final Completion is issued, and the final payment shall be subject to the payment provisions in the Contract for Construction and these General Conditions.

## **ARTICLE 13**

### **SUSPENSION AND TERMINATION OF CONTRACT.**

#### **13.1 Suspension By The College.**

The College shall have the right to stop or suspend the Work in whole or in part at any time. The Work may only be stopped or suspended by a written directive of the College's Representative, except in an emergency. The College's Representative may stop or suspend the Work in whole or in part on an emergent basis, either verbally or in writing, but any such emergent suspension or stop Work order shall be confirmed by a written directive from the College's Representative within 48 hours. The College may stop or suspend the Work because of any conditions affecting health or safety on or off site, any dangerous condition, any environmental hazard, the convenience of the College, or the public interest. If a directive to



stop or suspend all or part of the Work includes directions to secure the site, the Contractor shall perform the Work required in the directive. The Contractor shall also maintain the safety and security of the Project during the suspension for the protection of the site, Work in place, materials and equipment on site, persons on or near the site, and the College's property.

If all or part of the Work is suspended in response to a problem or condition caused by the Contractor's performance of its Contract, or parties other than the College itself, or conditions over which the College has no control, the Contractor will not be entitled to any additional compensation for the suspension. If the College directs the suspension of Work because of the improper performance of the Contract by the Contractor or those performing its Contract, the Contractor will not be entitled to any extension of any Contract Times or additional compensation by reason of the suspension. If a suspension is directed for reasons other than the fault of the Contractor or others involved in its performance of the Contract, the Contractor will be entitled to an extension under and to the extent authorized in Article 9, and additional compensation under and to the extent authorized by Article 11.

### **13.2 Termination For Convenience.**

The College may, by a written directive, terminate the Contract at any time before completion for the College's convenience or where it concludes that it is in the public interest to do so. The Contractor shall complete any items of Work specified in the notice of termination for convenience and any Work necessary to make the site safe for all persons and property at or near the Project site when the College terminates the Contract for convenience under this Article.

Absent the Contractor fault or violation of the Contract, the Contractor shall be paid in full for all properly completed Work, subject to the payment provisions in the Contract for Construction and these General Conditions. The Contractor will not be entitled to payment for costs and mark-ups for Work or materials not provided before the termination, or costs for Work and materials not provided unless the Contractor cannot avoid liability to pay those costs, or profit or overhead on the portion of the Contract that will not be performed because of the termination, or other types of damages. The extra compensation payable to the Contractor in connection with a termination for convenience may include the cost of materials or equipment purchased for the Project before termination but not installed if the Contractor cannot otherwise use or sell them.

The Contractor will also be entitled to reasonable termination costs in reasonable amounts for additional direct costs in connection with the termination, but not administrative, home office or overhead costs, lost profit, or consequential damages. In addition, any claims shall be subject to the provisions in the Contract for Construction and these General Conditions regarding claims and the maintenance of cost records.

The Contractor shall include provisions similar to this Article in subcontracts and supply contracts for the Project. When a termination for convenience is directed by the College, the Contract shall be closed out in accordance with the provisions of the Contract for Construction and these General Conditions regarding payment and Project completion.



### **13.3 Termination For Cause.**

The College may terminate the Contract for cause if the Contractor (i) commits violations of the Contract Documents, (ii) fails to perform the Work in accordance with the Contract Documents including the Project Schedule, (iii) fails to comply with applicable laws, rules or regulations, (iv) fails to pay Subcontractors or suppliers to the extent reasonably required, (v) becomes insolvent or becomes a debtor in a bankruptcy proceeding, (vi) fails to pay its debts, (vii) is found to have made false or misleading statements to the College in writing in obtaining the Contract or payments, (viii) fails to comply with employment discrimination laws, (ix) fails to pay prevailing wages, (x) fails to maintain or renew the required insurance, (xi) fails to maintain proper protection for the safety of persons or property on the site, (xii) fails to comply with reasonable and authorized directives of the College under the Contract, or (xiii) assigns its rights or interests under the Contract or payments under the Contract to any third party.

If the College terminates the Contract for cause, it shall first send a notice of intent to terminate to the Contractor and the Contractor's surety. The notice shall direct the Contractor to remedy or eliminate the deficiency within a specified time if the problem is one that can be eliminated. If the Contractor fails to reasonably comply with the directive and notice, the College may after 10 days issue a notice of termination to the Contractor and its surety which terminates the Contract effective immediately and specifies the reason for the termination.

If the Contract is terminated, the Contractor shall secure the site and take measures to leave the site safe for persons, material, Work in place and equipment before departing the site, and shall remove all tools and equipment within 5 days of the termination effective date. The Contractor shall not remove any materials or equipment stored on site unless directed to do so by the College. When the Contract is terminated, the Contractor shall deliver materials purchased for the Project and paid for by the College, but not stored on site, together with all appropriate warranties and guaranties to any location designated by the College.

If the Contractor's surety does not take over the completion of the Work in accordance with this Article, the College may appropriate any or all materials on the site that may be suitable and acceptable and may enter into an agreement for the completion of the Work with another contractor, or use other methods to complete the Work.

All damages, costs and charges incurred by the College together with the cost of completing the Work, will be deducted from any monies due or which may become due to the Contractor for Work properly completed by it before the termination. If such expenses exceed the sum available from the unpaid Contract Price, the Contractor and its surety shall be liable and shall pay to the College the amount of such excess in addition to other damages.

The rights and remedies of the College in connection with a termination for cause shall be in addition to other rights and remedies which it has under law, the Contract, and the Contractor's bond.

If the College terminates the Contract for cause and it is subsequently determined by a court that the Contractor was not in default, or that the termination was legally unjustified, the termination will be deemed to be a termination for convenience under this Article, and the rights



and remedies of the Contractor and its surety for the termination will be limited to those which exist in connection with a termination for convenience. If the College terminates the Contract for cause, the Contractor may not file a suit to recover on any claims arising out of the Project before the Work is Substantially Complete.

#### **13.4 Surety Takeover Following Termination For Cause.**

If the College terminates the Contractor for cause, the Contractor's performance bond surety may elect to takeover and complete the Contractor's Work and obligations under its Contract. If the surety elects to take over the completion of the Contract, it may only do so on the following conditions:

- (a) The surety must notify the College that it will take over completion of the Contract by a written notice of intent signed by a representative authorized to bind the surety within 5 calendar days of the surety's receipt of the College's notice of termination.
- (b) The surety and the College must execute a written takeover agreement within 10 days after the surety sends its notice of intent to takeover. The takeover agreement signed by the surety and the College, must:
  - i. contain an acknowledgement and agreement by the surety to assume the obligation to complete the balance of the Work under the Contract and to perform all of the Contractor's obligations under the Contract at the surety's sole cost and expense, and to utilize only contractors approved by the College to complete the Work, which approval shall not be unreasonably withheld;
  - ii. provide that the surety is entitled to be paid the unpaid balance under the terminated Contractor's Contract in accordance with and subject to the terms of the Contract for Construction and these General Conditions;
  - iii. provide that the surety is not relieved of any of its obligations under its payment and performance bond for the Project, and that the College retains its right to withhold money for Contract payments to compensate for damages or for other reasons where authorized under the Contract for Construction or these General Conditions; and
  - iv. provide that it is without prejudice to and is subject to all of the rights and remedies of the College, the surety, and the defaulted Contractor, and the surety may not require the College to agree to a takeover agreement that seeks to extinguish any such rights.
- (c) The surety must also pay without delay all obligations of the terminated Contractor for Work and materials on the Project, subject to a reasonable allowance of time to investigate and verify claims.

#### **13.5 Suspension By The Contractor For Non-Payment.**

If the Contractor is not paid sums due under an approved invoice within thirty (30) days of the billing date, it may suspend performance without penalty for breach of Contract, but only



after providing the College with 7 days written notice of non-payment, and only in the event that the College fails to furnish the Contractor, within that 7-day period, with a written statement of the amount withheld and the reasons for the withholding. Nothing herein shall be construed to excuse the Contractor's nonperformance, or to limit the College's rights and remedies relating to such nonperformance, with regard to any monies withheld from the Contractor upon the proper notice provided under this Article, or with regard to any Contractor claim disputed by the College.

## **ARTICLE 14**

### **WARRANTY/DEFECTIVE WORK AND MATERIALS**

#### **14.1 General Work One Year Warranty; HVAC Systems Two Year Warranty**

The Contractor warrants and guarantees for a one year period that all Work, materials and equipment conform to the Contract Documents and will not fail or manifest defects, that the Project and all its components will be fit for their intended functions, and that all material and equipment will be new and of good quality.

The general one year warranty period (or two year warranty period for HVAC work) shall commence when the Certificate of Substantial Completion is issued, and the one year period (or two year period for HVAC work) shall commence on that date for all components of the Project, including any equipment activated and operated before Substantial Completion, such as HVAC systems, electrical systems and elevators.

During the one year warranty period (or two year warranty period for HVAC work), the Contractor shall repair and remedy at its own expense any premature failure, defects or deficiencies in any Work, materials or equipment that are discovered or that develop during the one year period (or two year period for HVAC work), and shall do so within 5 days after receipt of a written warranty claim from the College. The Contractor shall also repair damages caused by any failure or defect covered by this warranty. A failure to provide the warranty service required shall constitute a breach of this warranty obligation as well as other applicable provisions of the Contract. This warranty shall not cover failures caused solely by substantial misuse or abuse by the College.

This general one year warranty (or two year warranty for HVAC work) is intended to provide the College with prompt warranty service for all aspects of the Project for the one year period (or two year period for HVAC work). It is not intended to limit or extinguish any additional warranties required by any of the Contract Documents, or provided by manufacturers of systems, equipment or materials provided under the Contract. It is not intended to eliminate or reduce the College's rights and remedies under the Contract Documents and law for defects and deficiencies in the Work, materials and equipment, or the time period of the Contractor's general responsibility and liability.



## **14.2 Defective Work, Materials And Equipment.**

Apart from the general one-year warranty provided for in this Article, the Contractor shall be responsible for defective Work, materials and equipment and any failure of these items to comply with the Contract Documents. This obligation shall extend beyond Substantial Completion, Final Completion and the general one year warranty (or two year warranty for HVAC work) in this Article.

If defects in the Work, materials or equipment or non-conforming items are discovered during construction and before Final Completion, the Contractor shall promptly correct them at its own expense. If the Contractor fails to correct defective or non-conforming Work, material or equipment in response to a written notice from the College, either during construction or after Final Completion, the College may employ others to provide the remedial work and the Contractor and its surety shall be liable for the cost thereof and damages incurred by the College. The Contractor and its surety shall also be liable for the cost of making good all Work and material destroyed or damaged by defects or the correction of defects.

If any portion of the Contractor's Contract Price remains in the custody of the College, either earned or unearned, the College may deduct money paid to others to remedy defects after notice is sent to the Contractor and damages incurred by the College when the Contractor fails to provide a remedy in response. The Contractor's responsibility for defects and non-conforming Work, material and equipment shall not be limited in time except by applicable law.

The Contractor's responsibility for defective Work shall not be affected by either the performance or the lack of performance of inspections by the College or the Architect. The issuance of payments, a Certificate of Substantial Completion or a Certificate of Final Completion shall not constitute acceptance of Work, material or equipment that is deficient or not in compliance with the Contract, or limit the Contractor's warranty or the other Contract obligations.

## **ARTICLE 15**

### **INDEMNIFICATION/LIABILITY TO THIRD PARTIES.**

#### **15.1 The Contractor's Indemnification Obligation.**

To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the College, the State of New Jersey, the New Jersey Educational Facilities Authority, Trenton State College Corporation, and any other persons or entities designated by the College, and the officers, directors, principals, attorneys, agents, servants, and employees of any of them (collectively the "Indemnified Parties") from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from: (1) performance of the Work, whether such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including loss of use resulting therefrom caused in whole or in part by the negligent or willful acts or omissions of the Contractor, Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder or (2) any one or more of the items set forth in



this Article. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Article.

In claims against any person or entity indemnified under this Article by an employee of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Article shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts, nor shall the same be limited by the types or limits of insurance carried or to be carried by the Contractor or any Subcontractor pursuant to the Contract Documents or otherwise.

The indemnity, defense, and hold harmless obligation set forth in this Article shall be supplemented by the following:

- (a) any claims or liens of Subcontractors, except to the extent that the non-payment upon which the claim or lien is predicated resulted solely from the College's wrongful failure to pay the Contractor sums due under the Contract;
- (b) any fines, penalties, liquidated damages, assessments or other executions imposed by any governmental authority having jurisdiction over the Project by reason of the Contractor's failure to comply with any requirement of the Contract;
- (c) any losses, damages, or expenses incurred by reason of the Contractor's failure to obtain and maintain in force or cause to be obtained and maintained, the insurance required by the terms of the Contract;
- (d) any losses, damages, or expenses incurred by reason of any failure (whether or not specifically identified herein) by the Contractor to perform its obligations under the Contract Documents or any breach of the Contract;
- (e) any claims, damages, or expenses incurred by reason of the Contractor's infringement or alleged infringement of any patent, copyright, or other intellectual property or similar rights; and
- (f) any claims, damages, liquidated damages, penalties, or fines assessed against the College, directly or indirectly, solely or partially by reason of the Contractor's failure to comply with any applicable laws, codes, statutes, or regulations.

If any judgment is rendered against the Indemnified Parties for which indemnification is required under this Article, the Contractor shall satisfy and discharge it. The Contractor shall reimburse the College for reasonable attorney fees, costs and expenses incurred by the Indemnified Parties in the defense of such suit or claim.

The College shall give written notice to the Contractor of claims and suits for which indemnification may be claimed pursuant to this Article.



The foregoing obligations shall survive the completion of the Work and final payment to the Contractor (or the sooner termination of the Contract) with respect to all matters accrued during the term of the Contract and such obligations shall not be construed to negate, abridge or reduce any other rights, obligations or indemnity which would otherwise exist as to a party or person indemnified by this Article.

## **15.2 The Subcontractor's Indemnification Obligation.**

The Contractor shall cause the indemnification obligations set forth in this Article to be included in all contracts with its Subcontractors.

## **ARTICLE 16** **INSURANCE AND BONDS.**

### **16.1 The Contractor's Insurance.**

The Contractor shall purchase from, and maintain with a company or companies lawfully authorized to do business in the State of New Jersey, insurance for protection from claims under workers' compensation and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and claims for damages, including the Work itself, to property which may arise out of or result from the Contractor's operations and completed operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or anyone directly or indirectly employed by any of them, until at least 1 year after the Final Completion and acceptance of the Project. This insurance shall be written for not less than the limits set forth below or as required by law, whichever coverage is greater, and shall include contractual liability insurance applicable to the Contractor's obligations under Article 15 (Indemnification). The Contractor expressly agrees that any insurance protection required by the Contract Documents shall in no way limit the Contractor's obligations under the Contract, and shall not be construed to relieve the Contractor from liability in excess of such coverage. Nor shall it preclude the College from taking such actions as are available to it under any other provisions of the Contract for Construction, these General Conditions or the law.

#### **16.1.1 Types and Minimum Amounts of Insurance:**

- (a) **Commercial General Liability Insurance (CGL).** Commercial General Liability insurance ISO CG 00 01 12 07 or later occurrence form of insurance including contractual liability with limits of at least one million dollars (\$1,000,000) per occurrence, and at least two million dollars (\$2,000,000) in the aggregate. The general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. The CGL policy shall also include products/completed operations with limits of at least one million (\$1,000,000) in the aggregate. This insurance shall be maintained for at least one year after the Final Completion of the Project.
- (b) **Automobile Liability Insurance.** Comprehensive Automobile Liability insurance covering owned, non-owned, and hired vehicles. The limits of liability shall not be less than one million dollars (\$1,000,000) combined single limit for bodily injury and property damage for each occurrence.



- (c) **Workers Compensation/ Employer's Liability.** Worker's Compensation Insurance applicable to the laws of the State of New Jersey and other State or Federal jurisdictions required to protect the employees of the Contractor and any Subcontractor, sub-subcontractor or supplier who will be engaged in the performance of the Contract. The certificate must so indicate that no proprietor, partner, executive officer or member is excluded. This insurance shall include Employers' Liability Insurance with a limit of liability not less than one million dollars (\$1,000,000) bodily injury, each occurrence, one million dollars (\$1,000,000) disease, each employee, and one million dollars (\$1,000,000) disease, aggregate limit.

All required insurance coverages must be written by insurance companies acceptable to the College. All insurance companies must have a minimum A.M. Best's financial strength rating of A- or better, or an equivalent rating from another respected rating agency, and an A.M. Best's size rating of VII or greater.

**16.1.2 Additional Insureds.** All insurance required herein, except Worker's Compensation, shall name The College of New Jersey, the State of New Jersey, the New Jersey Educational Facilities Authority, Trenton State College Corporation and any other persons or entities designated by the College as additional insureds.

**16.1.3 Cancellation.** The certificates of insurance shall provide for 30 days written notice to the College before any cancellation, expiration or non-renewal during the term the insurance is required by the Contract.

**16.1.4 Evidence of Insurance.** The Contractor shall when the Contract for Construction is signed and before beginning the Work required under the Contract, provide the College with valid certificates of insurance signed by an insurance provider or authorized agent or underwriter to evidence the Contractor's insurance coverage as required in this Article, and also copies of the policies themselves. The certificates of insurance shall specify that the insurance provided is of the types and in the amounts required in this Article, and that the policies cannot be canceled except after 30 days written notice to the College. The Contractor shall also be required to provide the College with valid certificates of renewal when policies expire. The Contractor shall also, when requested, provide the College with additional copies of each policy and all endorsements required under the Contract, which are certified by an agent or underwriter to be true copies of the policies and endorsements issued to the Contractor.

**16.1.5 Remedies for Lack of Insurance.** If the Contractor fails to renew any of its required insurance policies, or any policy is canceled, terminated or modified, the College may refuse to pay monies due under the Contract. The College, in its sole discretion and for its sole benefit, may use monies retained under this Article to attempt to renew the Contractor's insurance or obtain substitute coverage if possible for the College's sole benefit, and may invoke other applicable remedies under the Contract for Construction and these General Conditions including claims against the Contractor and its surety. During any period when the required insurance is not in effect, the College may also, in its sole discretion, either suspend the Work under the Contract or terminate the Contract.



## **16.2 The Subcontractor's Insurance.**

The Contractor shall ensure that its Subcontractors purchase and maintain insurance on the same terms and with coverages customary for each trade as required by the Contractor under the Contract. The Contractor shall contractually obligate its Subcontractors to indemnify, defend, and hold harmless the College upon the same terms and conditions that the Contractor is required to do so as provided in Article 15 of these General Conditions (Indemnification).

## **16.3 Payment And Performance Bond.**

The Contractor is required to furnish the College with a payment bond and a performance bond from an approved surety as described in this Article and in the bid documents. The bonds shall conform to N.J.S.A. 2A:44-147. The Contract will not become effective until these bonds are provided to and approved in writing by the College. The bonds must also be accompanied by the surety disclosure statement and certification required by N.J.S.A. 18A:64-68.

# **ARTICLE 17** **DISPUTE RESOLUTION.**

## **17.1 Mediation.**

If a dispute or claim arises out of or relates to the Contract, or the breach thereof, and if the dispute cannot be settled through negotiation, the dispute or claim may, at the College's sole option, be subject to mediation administered by the American Arbitration Association under its Construction Industry Mediation Rules as a condition precedent to binding dispute resolution. The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in Mercer County, New Jersey, at the offices of the College's attorneys, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable in any court having jurisdiction thereof.

## **17.2 Method Of Binding Dispute Resolution.**

For any dispute or claim, not resolved by mediation pursuant to this Article, the method of binding dispute resolution shall be litigation in the state or district courts of the State of New Jersey, unless the College, in its sole discretion, decides to submit the dispute or claim to arbitration pursuant to this Article.

## **17.3 Arbitration (If The College Elects To Arbitrate).**

If the College decides, in its sole discretion, to submit a dispute or claim to arbitration rather than litigation as provided above, the arbitration shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Contract unless the parties mutually agree otherwise. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The arbitrator shall be a New Jersey licensed attorney with at least twenty (20) years' experience practicing in construction law. In the event that the parties mutually agree to use a panel of three arbitrators, then the construction attorney will be the



presiding arbitrator, one of the arbitrators will be a registered architect and the other will be a contractor, all of whom shall be neutral and independent. This Article shall not preclude the College or Contractor from instituting legal action to discharge an invalid construction lien. The arbitration hearing shall be held in Mercer County, New Jersey, at the offices of the College's attorneys, unless another location is mutually agreed upon.

A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the claim, dispute or other matter in question would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the claim, dispute or other matter in question.

The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by the parties to the Contract shall be specifically enforceable in accordance with applicable law in any court having jurisdiction thereof.

The award rendered by the arbitrator(s) shall be a reasoned award and shall include a statement of findings of fact and conclusions of law and shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

#### **17.4 Consolidation Or Joinder.**

The College, in its sole discretion, may consolidate an arbitration conducted under the Contract with any other arbitration to which it is a party provided that (i) the arbitration agreement governing the other arbitration permits consolidation, (ii) the arbitrations to be consolidated substantially involve common questions of law or fact, and (iii) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

The College, in its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

The College, in its sole discretion, may grant to any person or entity made a party to an arbitration conducted under this Article, whether by joinder or consolidation, the same rights of joinder and consolidation as the College under the Contract.

#### **17.5 Work During Pendency Of Dispute.**

Unless otherwise instructed by the College, the Contractor shall carry on its Work during the pendency of any dispute hereunder, and the College shall continue making payments to the Contractor of undisputed amounts.



### **17.6 Prompt Payment Claims.**

Notwithstanding the foregoing, disputes regarding only whether a party has failed to make payments required pursuant to New Jersey's Prompt Payment Act may be submitted to alternative dispute resolution as provided in N.J.S.A. 2A:30A-2(f). In such event, the College and the Contractor shall share equally the fees and expenses of the selected mediator. Provided, however, that nothing herein shall be construed, in whole or in part, as a waiver, release or modification of the provisions of the New Jersey Contractual Liability Act, N.J.S.A. 59:13-1, et seq., as it governs claims against the College.

### **17.7 The Contractor's Claims: Procedures And Limitations.**

Claims by the Contractor against the College shall be subject to the New Jersey Contractual Liability Act, N.J.S.A. 59:13-1, et seq., including the notice and time for suit provisions. For the purpose of determining the time within which the Contractor must file suit under the New Jersey Contractual Liability Act, "completion of the contract" shall be deemed to have occurred upon achievement of Substantial Completion as defined in these General Conditions.

The Contractor also agrees that it shall not be entitled to assert claims against the College for any compensation beyond that provided for in the Contract by reason of the acts or omissions of any third parties, including but not limited to the Architect and any other contractor on the Project. The Contractor may not assert claims for extra costs for home offices expenses, home office overhead, lost profits or revenue, or consequential damages as that term is defined in law. All claims shall also be subject to all other pertinent provisions of the Contract for Construction and the Contract Documents including these General Conditions. The Contractor also agrees that it may not assert any claims for extra costs or damages unless it maintains all the records of its estimated and actual costs as required by the Contract for Construction and these General Conditions.

### **17.8 Dispute Resolution Process In The Contractor's Subcontracts.**

The Contractor shall include this dispute resolution process in all of its contracts with any Subcontractors or suppliers on this Project.

## **ARTICLE 18** **MISCELLANEOUS.**

### **18.1 Prevailing Wage.**

The Contractor and its Subcontractors shall comply with the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 through 56.57. Workers employed by the Contractor or any Subcontractor or sub-subcontractor in the performance of services directly on the Project must be paid prevailing wages. As required by N.J.S.A. 34:11-56.27 and 56.28, the Contract cannot become effective until the College obtains from the New Jersey Department of Labor a determination of the prevailing wage rates applicable to the Project as of the Contract award date and attaches a copy to the Contract. As required by N.J.S.A. 34:11-56.27, the Contractor or any



Subcontractor may be terminated if any covered worker is not paid prevailing wages on the Project, and the Contractor and its surety shall be liable for any additional costs which result. The Contractor and its Subcontractors must be registered with the New Jersey Department of Labor (N.J.S.A. 34:11-56.51 et seq.), and the prevailing wage rates must be posted at the job site (N.J.S.A. 34:11-56.32). The Contractor and its Subcontractors must prepare accurate certified records of wages paid for each worker on the Project (N.J.S.A. 34:11-56.29), and copies for the period covered by each invoice must be attached to the invoice submitted under the Contract. In accordance with N.J.S.A. 34:11-56.33, the Contractor's final invoice must include a statement of all amounts still then due to workers on the Project. The Contractor is also cautioned that it must use job titles and worker classifications consistent with those approved by the Department of Labor, and that, if it intends to pay apprentice rates, it must comply with the Department of Labor's regulations at N.J.A.C. 12:60-7.1 through 7.4.

If the State's Prevailing Wage Act is amended, or the language stated herein is inconsistent with the language contained in the State's Prevailing Wage Act, the language of the State's Prevailing Wage Act shall control.

## **18.2 Employment Discrimination.**

The Contractor and any Subcontractors employed by it shall comply with N.J.S.A. 10:2-1 through 10:2-4 and N.J.S.A. 10:5-1 et seq., including N.J.S.A. 10:5-31 through 10:5-35, which prohibit discrimination in employment in public contracts. The statute and the rules and regulations promulgated thereunder shall be considered to be part of the Contract and binding upon the Contractor and its Subcontractors. If the College is notified of any violation of the public contract awarding regulations in accordance with N.J.A.C. 17:27-7.4 concerning the financing of minority and women outreach and training programs, the College reserves the rights to deduct the outreach and training allocation from the Contract. During the performance of the Contract, the Contractor agrees that:

- (a) In the hiring of persons for the performance of Work under the Contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under the Contract, neither the Contractor, its Subcontractors nor any person acting on behalf of the Contractor or any of its Subcontractors, shall, by reason of race, creed, religion, color, national origin, nationality, ancestry, age, sex (including pregnancy), familial status, marital status, domestic partnership or civil union status, affectional or sexual orientation, gender identity or expression, atypical hereditary cellular or blood trait, genetic information, liability for military service, and mental or physical disability, perceived disability, and AIDS and HIV status, discriminate against any person who is qualified and available to perform the Work to which the employment relates;
- (b) Neither the Contractor, its Subcontractors, nor any person acting on behalf of the Contractor or any of its Subcontractors shall, in any manner, discriminate against or intimidate any employee engaged in the performance of Work under the Contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any



such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, religion, color, national origin, nationality, ancestry, age, sex (including pregnancy), familial status, marital status, domestic partnership or civil union status, affectional or sexual orientation, gender identity or expression, atypical hereditary cellular or blood trait, genetic information, liability for military service, and mental or physical disability, perceived disability, and AIDS and HIV status;

- (c) There may be deducted from the amount payable to the Contractor by the College, under the Contract, a penalty of \$50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the Contract; and
- (d) The Contract may be canceled or terminated by the College, and all money due or to become due hereunder may be forfeited, for any violation of this Article of the Contract occurring after notice to the Contractor from the College of any prior violation of this Article of the Contract. The Contractor and its Subcontractors shall comply with all laws prohibiting discrimination against employees, and shall comply with the provision in the Contract regarding employment discrimination.

If the State's Law Against Discrimination is amended, or the language stated herein is inconsistent with the language contained in the State's Law Against Discrimination, the language of the State's Law Against Discrimination shall control.

### **18.3 Patents.**

If any design, device, material or process covered by patents or copyright is used in the Work, the Contractor shall provide for such use by a suitable agreement with the patent or copyright owner. The Contractor shall bear all costs arising from the use of patented materials, equipment, or processes and all copyrighted materials used on or incorporated in the Work. The Contractor shall defend, indemnify and hold harmless the College and its representatives from any and all claims for infringement by reason of the use of any such patented or copyrighted items.

### **18.4 The Contractor's Compliance With Law.**

The Contractor shall keep fully informed of all federal, state and local laws, ordinances, regulations and orders of agencies that have jurisdiction or authority that in any manner affect those employed on the Project or the Project. The Contractor shall at all times observe and comply with, and cause its agents and employees to observe and comply with, all such laws, ordinances, regulations, and/or orders. The Contractor shall also protect and indemnify, defend and hold harmless the College and its representatives against any claim or liability arising from the violation of any laws, ordinances, regulations, or orders, whether by the Contractor or its employees, agents, Subcontractors at any tier, suppliers or materialmen.



### **18.5 Environmental Protection – The Contractor’s Duty To Comply With Applicable Law.**

The Contractor shall comply with all applicable federal, state and local laws and regulations and all conditions of permits pertaining to the protection of the environment. Necessary precautions shall be taken to prevent pollution of streams, lakes, ponds, rivers, wetlands, groundwater, reservoirs, and property by chemicals, fuels, oils, bitumens, or other harmful or hazardous materials as defined by law. The Contractor also shall not pollute the atmosphere from particulate or gaseous matter in violation of applicable law.

### **18.6 No Personal Liability Of College Officials.**

In carrying out any of the provisions of the Contract, or in exercising any right or authority granted to them by or in connection with the Contract, there shall be no liability upon any trustee, officer or employee of the College, either personally or as officials of the College, it being agreed that in all such functions they act only as agents and representatives of the College.

### **18.7 Buy American Requirement.**

Pursuant to N.J.S.A. 52:32-1 only manufactured and farm products of the United States, whenever available, shall be used in work.

Pursuant to N.J.S.A. 52:33-1 et seq., notwithstanding any inconsistent provision of any law, and unless the head of the department, or other public officer charged with the duty by law, shall determine it to be inconsistent with the public interest, or the cost to be unreasonable, only domestic materials shall be acquired or used for any public work. This Article shall not apply with respect to domestic materials to be used for any public work, if domestic materials of the class or kind to be used are not mined, produced or manufactured, as the case may be, in the United States in commercial quantities and of a satisfactory quality. If the State’s “Buy American” laws are amended, or the language stated herein is inconsistent with the language contained in the State’s “Buy American” laws, the language of the State’s “Buy American” laws shall control.



**18.8 Compliance With Grant Requirements.** The Contractor acknowledges and agrees that if the College receives any grant monies in connection with the Project, the Contractor and its Subcontractors shall comply with all requirements associated with such grant or set forth in such grant agreement. Any such grant requirements shall be identified in the Request for Proposals.

**18.9 Modification Of Contract.**

No modification or amendment of the Contract shall be effective unless it is in writing and signed by both the College and the Contractor.

**18.10 State Sales Tax Exemption.**

Materials, supplies or services for exclusive use in constructing the Project are exempt from the State Sales Tax Act. Rentals of equipment are not exempt from any tax under the State Sales Tax Act.

**18.11 Successors and Assigns.**

The College and the Contractor respectively bind themselves, their successors and assigns, to the other party hereto and to the successors and assigns of such other party in respect to covenants, agreements and obligations contained in the Contract Documents.

The Contractor shall not assign the Contract, nor shall the Contractor transfer or assign any Contract funds, due or to become due, or claims of any nature it has against the College without the prior written approval of the College. The College in its sole discretion and considering primarily the interests of the College may elect either to grant or to deny such approval. If the Contractor attempts to make such an assignment without the College's prior written approval, the Contractor shall nevertheless remain legally responsible for all obligations under the Contract.

The College shall be entitled to assign its rights hereunder to one or more lenders as collateral for loans which the College may obtain to finance construction of the Project and to a party who presently has or later acquires a legal interest in the premises. The Contractor agrees to execute such certificates, documents and instruments as are reasonably requested by the College, including, without limitation, certificates, documents and instruments that evidence the Contractor's consent to an assignment of the Contract or confirm the absence or existence of a default on the part of the College hereunder.

**18.12 Construction Liens.**

If any Subcontractor or other person working under the Contractor files a construction lien or claim or notice of intention or right to file a lien for or on account of Work, labor, services, materials, equipment or other items furnished under or in connection with the Contract for which the College has paid the Contractor, the Contractor agrees to discharge or remove such lien, claim or notice at its own expense by bond, payment or otherwise within twenty (20) calendar days from the date of the filing thereof, and upon its failure to do so, the College shall have the right to cause any such lien or claim, notice of intention or stop notice to be removed or discharged by whatever means the College chooses, at the sole cost and expense of the



Contractor (such costs and expenses to include legal fees and disbursements). The Contractor agrees to indemnify, defend and hold harmless the College and its representatives from and against any and all such liens, claims or other filings, and actions brought or judgments rendered thereon, and from and against any and all losses, damages, liabilities, costs and expenses, including legal fees and disbursements, which the College may sustain in connection therewith. Further, if any Subcontractor or other person working under the Contractor files a construction lien or claim or notice of intention or right to file a lien for or on account of Work, labor, services, materials, equipment or other items furnished under or in connection with the Contract for which the College has paid the Contractor, the College may, in the College's sole discretion, pay all wages, damages, recoveries, costs and expenses and reasonable counsel fees arising therefrom and deduct the same from any monies due or to become due to the Contractor.

#### **18.13 Independent Contractor Status.**

The relationship of the Contractor to the College is that of an independent contractor. The Contractor agrees that it shall conduct itself consistent with such status, and shall not hold itself out as or claim to be a trustee, officer, employee or agent of the College. The Contractor shall not make any claim or demand for any right or privilege applicable to officers or employees of the College, including but not limited to, workers compensation, unemployment insurance benefits, social security coverage, or retirement benefits.

#### **18.14 Third Party Beneficiary Rights Not Intended.**

It is specifically agreed between the College and the Contractor that no provisions of the Contract Documents are intended to make the public or any member thereof a third party beneficiary of the Contract, or to authorize anyone not a party to the Contract to maintain a suit for personal injuries, property damage or other claims under the Contract. It is also the intent of the College and the Contractor that no individual or firm that supplies materials, labor, services, or equipment to the Contractor for the performance of the Work shall be a third party beneficiary of the Contract.

#### **18.15 Gifts To College Employees And Agents Prohibited.**

The Contractor shall not give any gifts of any nature, nor any gratuity in any form, nor loan any money or anything of value to any College employee or relative thereof, or any agent of the College. The Contractor shall not rent or purchase any equipment or supplies of any kind from any College employee or relative thereof or any agent of the College.

#### **18.16 Compliance With Procurement Statutes.**

The Contractor warrants and represents that the Contract has not been solicited or secured, directly or indirectly, in a manner contrary to the law of New Jersey, and in particular the provisions of N.J.S.A. 18A:64-6.1, 6.2 and 6.3, and that the Contractor has not and shall not violate the law of New Jersey relating to the procurement of or the performance of the Contract by any conduct, including the paying of any gratuity of any kind, directly or indirectly, to any College trustee, employee or officer. Any violation of this Article shall be cause for the College to terminate the Contract, to retain all unpaid and/or unearned monies, and to recover all monies paid. The Contractor shall notify the College in writing of any interest which any trustee, officer,



employee or consultant of the College has in, or association with the Contractor, any other contractor, any Subcontractor, material supplier, consultant, or manufacturer, or other party which has any interest in the Project.

#### **18.17 Conflict Of Interest.**

The Contractor shall not pay, offer to pay, or agree to pay, either directly or indirectly, any fee, commission, compensation, gift, gratuity, or other thing of value of any kind to any State officer or employee or special State officer or employee, as defined by N.J.S.A. 52:13D- 13b. and e., in the Department of the Treasury or any other agency with which the Contractor transacts or offers or proposes to transact business, or to any member of the immediate family, as defined by N.J.S.A. 52:13D-13i., of any such officer or employee, or any partnership, firm, or corporation with which they are employed or associated, or in which such officer or employee has an interest within the meaning of N.J.S.A. 52:13D-13g.

The solicitation of any fee, commission, compensation, gift, gratuity or other thing of value by any State officer or employee or special State officer or employee from any State vendor shall be reported in writing forthwith by the Contractor to the Attorney General and the Executive Commission on Ethical Standards.

The Contractor may not, directly or indirectly, undertake any private business, commercial or entrepreneurial relationship with, whether or not pursuant to employment, contract or other agreement, express or implied, or sell any interest in the Contractor to, any State officer or employee or special State officer or employee having any duties or responsibilities in connection with the purchase, acquisition or sale of any property or services by or to any State agency or any instrumentality thereof, or with any person, firm or entity with which he is employed or associated or in which he has an interest within the meaning of N.J.S.A.52:13D-13g. Any relationships subject to this Article shall be reported in writing forthwith to the Executive Commission on Ethical Standards, which may grant a waiver of this restriction upon application of the State officer or employee or special State officer or employee upon a finding that the present or proposed relationship does not present the potential, actuality or appearance of a conflict of interest.

The Contractor shall not influence, or attempt to influence or cause to be influenced, any State officer or employee or special State officer or employee in his official capacity in any manner which might tend to impair the objectivity or independence of judgment of said officer or employee.

The Contractor shall not cause or influence, or attempt to cause or influence, any State officer or employee or special State officer or employee to use, or attempt to use, his official position to secure unwarranted privileges or advantages for the Contractor or any other person.

The provisions cited above shall not be construed to prohibit a State officer or employee or special State officer or employee from receiving gifts from or contracting with the Contractor under the same terms and conditions as are offered or made available to members of the general public subject to any guidelines the Executive Commission on Ethical Standards may promulgate.



The Contractor shall require its Subcontractors and suppliers to comply with the requirements of this Article.

**18.18 Confidential Information.**

The Contractor shall maintain the confidentiality of information specifically designated as confidential by the College, unless withholding such information would violate applicable law. The Contractor shall require its Subcontractors to maintain the confidentiality of information specifically designated as confidential by the College.

**18.19 Publicity.**

Publicity and/or public announcements pertaining to the Project must be approved in writing by the College prior to release.



# PROJECT MANUAL

FOR:

## THE COLLEGE OF NEW JERSEY ROSCOE WEST HALL RENOVATION

PREPARED FOR

THE COLLEGE OF NEW JERSEY 2000 PENNINGTON  
ROAD  
EWING, NJ 08628-2815

August 5, 2024

100% Construction Documents



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## SECTION 01 1000 – SUMMARY

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#### 1.1 WORK OF THIS PROJECT

- A. The Project consists of all work described herewith along with all drawings, specifications, addendums/bulletins/clarifications, General Terms and Conditions and all contract bid documents.
- B. The contract documents are those contained in these specifications, drawings and addendum/clarifications issued during the bidding process.

#### 1.2 CONTRACTS

- A. The Work will be performed under **one prime contract**.
  - 1. General Construction Contract:
    - a. The General Construction Contract shall include all labor, materials, equipment and services necessary for the complete construction of all work shown on the Drawings and described in Divisions 0, 1, and 2 through 33 Specifications.
    - b. Structural Steel Work: shall include the fabrication, delivery and installation of all steel elements. Include all clips, shims and plates as required for a complete installation.
    - c. The Heating Ventilation and Air Conditioning Work: shall include all labor, material, equipment and services necessary for the complete construction of all heating, ventilating and air conditioning work and work of other ducted systems shown on the Drawings and described in Divisions 0, 1 and 23 of the Specifications and may include other divisions where noted. Include all work to five feet outside the building and close coordination with all other Contractors.
    - d. The Plumbing Work: shall include all labor, material, equipment and services necessary for the complete construction of all plumbing, drainage and fire protection work and work of other piped systems shown on the Drawings and described in Divisions 0, 1 and 22 of the Specifications and may include other divisions where noted. Include all work to five feet outside the building and close coordination with all other Contractors.
    - e. The Electrical Work: shall include all labor, material, equipment and services necessary for the complete construction of all electrical, electronic security, data and telecommunications, video, fire alarm work shown on the Drawings and described in Divisions 0, 1 and 26 of the Specifications and may include other divisions where noted. Include all Electrical site work, connection of all devices to power sources and close coordination with all other Contractors.
    - f. The Elevator Work: shall include all labor, material, equipment and services necessary for the complete construction of all elevator work if



shown on the Drawings and described in Divisions 0, 1, and 14 of the  
Specifications and



may include other divisions where noted. All contractors are responsible for their respective sections of work, which may include work in other sections or shown on drawings other than their respective format.

- g. All contractors must make themselves familiar with the total project and all the project documents. No additions to Contract sums will be approved for any contract where work may be shown for that Contract on Drawings typical for other trades.

### 1.3 ALTERATIONS AND COORDINATION

- A. The General Contractor shall coordinate the entire work of Project, including preparation of general coordination drawings through the HVAC Contractor (i.e. ductwork shop drawings and then overlays by each subcontractor), diagrams and schedules, and control of site utilization; from the beginning of activity, through the project closeout and warranty periods.

### 1.4 KNOWLEDGE OF CONTRACT REQUIREMENTS

- A. Each Contractor will be held to have examined the site of the Work prior to submitting his proposal and informed himself, his Subcontractors, Sub-subcontractors and material suppliers of all existing conditions affecting the execution of the work.
- B. Each Contractor will be held to have examined the Contract Documents, and Modifications thereto, as they may affect subdivisions of the Work and informed himself, his Subcontractors, Sub-subcontractors and material suppliers of all conditions thereof affecting the execution of the Work.
- C. Each Contractor will be held to be thoroughly familiar with all conditions affecting labor in the neighborhood of the Project including, but not limited to, Unions, incentive pay, procurement, living and commuting conditions and to have informed his Subcontractors and Sub-subcontractors thereof.
- D. The Specifications and Drawings shall be considered as a whole and shall not be separated during the bidding or construction period. Division of specifications into Divisions and Sections is solely for organization and is not intended to define trade responsibilities, unless specifically stated. Each Contractor shall be responsible for all work and, if he/she divides the Drawings or Specifications for use of subcontracts and material suppliers, he does so at his own risk.

### 1.5 CONTRACT DOCUMENTS INFORMATION

- A. The Contract Documents are prepared in accordance with available information as to existing conditions and locations. If, during construction, conditions are revealed at variance with the Contract Documents, notify the Architect immediately so that supplementary instructions may be issued.
- B. The Specifications determine the kinds and methods of installation of the various materials, the Drawings establish the quantities, dimensions and details of materials, the schedules on the Drawings, give the location, type and extent of the materials.



- C. In case of any discrepancy between the various Drawings, or between various parts of the Specifications or between Drawings and Specifications, the matter shall immediately be submitted to the Architect and for Contractual purposes, the most expensive condition shall apply.
- D. Dimensions given on the Drawings govern scale measurements and large scale drawings govern small scale drawings, except as to anything omitted unless such omission is expressly noted on the larger scale drawings.
- E. The techniques or methods of specifying to record requirements varies throughout text, and may include "prescriptive", "open generic/descriptive", "compliance with standards", "performance", "proprietary", or a combination of these. The method used for specifying one unit of work has no bearing on requirements for another unit of work.
- F. Whenever a material, article or piece of equipment is referred to in the singular number in the Contract Documents, it shall be the same as referring to it in the plural. As many such materials, articles or pieces of equipment shall be provided as are required to complete the Work.

## 1.6 STANDARDS

- A. Whenever a material, article, or piece of equipment is specified by reference to a governmental, trade association or similar standard, it shall comply with the requirements of the latest publication thereof and amendments thereto in effect on the bid date.
- B. Applicable standards of construction industry have same force and effect, and are made a part of Contract Documents by reference, as if copied directly into Contract Documents, or as if published copies were bound herewith.
- C. Where compliance with 2 or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, most stringent requirement, which is generally recognized to be also most costly, is intended and will be enforced, unless specifically detailed language written into the Contract Documents clearly indicates that a less stringent requirement is to be fulfilled. Refer, apparently equal but different requirements, and uncertainties as to which level of quality is more stringent, to Architect for a decision before proceeding. Except for overlapping or conflicting requirements, where more than one set of requirements are specified for a particular unit of work, option is intended to be Contractor's regardless of whether specifically indicated as such.
- D. Reference standards referenced directly in Contract Documents or by governing regulations have precedence over nonreferenced standards that are recognized in industry for applicability to work.

## 1.7 DEFINITIONS (Also refer to 014200 for further references)

- A. A substantial amount of specification language constitutes definitions for terms found in other contract documents, including drawings, which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated



thereon. Certain terms used in contract documents are defined generally in this article.  
Definitions and explanations of this section are not necessarily either complete or  
exclusive, but are



general for the work to extent not stated more explicitly in another provision of contract documents.

- B. General requirements apply to entire work of Contract and, where so indicated, to other elements which are included in the project.
- C. The term "indicated" is a cross reference to details, notes or schedules on the Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping to locate cross reference, and no limitation of location is intended, except as specifically noted.
- D. Where the term "Owner" is used, this shall designate the: The College of New Jersey
- E. Where the term "Architect" is used this shall designate the firm of: See the Project Cover for the "ARCHITECT" information.
- F. Where the term "Construction Manager" is used this shall designate the Owner's Project Manager.
- G. Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by Architect", "requested by Architect", etc. However, no such implied meaning will be interpreted to extend Architect's responsibility into Contractor's area of construction supervision.
- H. Where used in conjunction with Architect's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect be interpreted as a release of Contractor from responsibilities to fulfill requirements of the Contract Documents.
- I. Whenever the word "equivalent" is used it shall be understood to indicate that the Architect will consider substitutions for the product and/or manufacturer named in the Specifications, provided that the proposed substitution meets or exceeds the performance of the specified item. It shall be further understood that the judgment of "equivalency" rests solely with the Architect. Equipment, products, materials, etc. will be judged by the Architect according to the criteria listed below. Criteria shall be applied according to the Architect's discretion and are not listed in order of importance.
  - 1. Ability to fit into space provided.
  - 2. Quality.
  - 3. Serviceability.
  - 4. Esthetics.
  - 5. Availability of finishes.
  - 6. Workmanship.
  - 7. Economy of operation.
  - 8. Suitability for purpose intended.
  - 9. Performance to meet design requirements



- J. The project site is the space available to Contractor for performance of the Work, either exclusively or in conjunction with others performing other work as part of the Project. The extent of project site is shown on the Drawings, and may or may not be identical with description of the land upon which project is to be built.
- K. Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
- L. Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.
- M. Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.
- N. An installer is the entity, person or firm, engaged by the Contractor or his subcontractor or sub-subcontractor for the performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement that such installers be expert in operations they are engaged to perform.
- O. The testing laboratory is an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and interpret results of those inspections or tests.
- P. Where the words such as "The Contractor shall" and similar words are omitted, the sentence structure shall be considered to include such words since the Specifications are directional in nature, indicating work to be performed by the Contractor.
- Q. The term "Subcontractor" is used hereinafter only to delineate the work of the various trades. The term "Subcontractor" shall not be construed as a firm direction to subcontract a particular Section of the Work.
- R. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other accessories related to such piping.
- S. "Concealed" means hidden from sight as in chases, furred spaces, shafts, hung ceilings, or embedded in construction.
- T. "Exposed" means "not concealed" as defined above. Work in trenches, crawl spaces, and tunnels shall be considered "exposed" unless otherwise specifically noted.
- U. Damage: Any sort of deterioration whether due to weather, normal wear and tear, accident, or abuse, resulting in soiling, marring, breakage, corrosion, rotting, or impairment of function.

## 1.8 PARTIAL OCCUPANCY



- A. Each Contractor agrees to use and occupancy of a portion or unit of the Project before formal acceptance by the Owner under the following conditions:
1. A certificate of Substantial Completion shall be prepared and executed as provided in the General Conditions. If, in the opinion of the Architect, the Contractor is chargeable with unwarranted delay in completing the Work or other Contract requirements, the signature of the Contractor will not be required. The certificate of Substantial Completion shall be accompanied by a written endorsement of the Contractor's insurance carrier and surety permitting occupancy by the Owner during the remaining period of Project work.
  2. Occupancy by the Owner shall not be construed by the Contractor as being an acceptance of that part of the Project to be occupied.
  3. Contractor will not be held responsible for any damage to the occupied part of the Project resulting from the Owner's occupancy.
  4. Occupancy by the Owner shall not be deemed to constitute a waiver of existing claims in behalf of the Owner or Contractor against each other.
  5. Use and occupancy of any portion of the building by the Owner prior to Project acceptance does not relieve the Contractor of his responsibility to maintain all insurance and bonds required of the Contractor under the Contract until the Project is completed and accepted by the Owner.
  6. The Contractor agrees that the Owner may place and install as much material, equipment and furnishings as is possible during construction without interfering with orderly progress of the Work and prior to use and occupancy of the various parts of the Work, and further agrees that such placing and installation shall not evidence completion of the Work or signify the Owner's acceptance of the Work or of any part thereof.

#### 1.9 REGULATIONS AND CODES

- A. Work shall be in accordance with the latest applicable requirements, regulation and codes as set forth below.
1. See Drawings for all listed Regulations and Codes that have been applied to this project.

#### 1.10 LIMITED USE OF PREMISES

- A. General: The prime contractors shall limit their use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.
1. Confine operations to areas within contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
  2. Keep driveways and entrances serving the premises clear and available to the Owner and the Public at all times. Do not use these areas for parking or storage of materials and equipment on site.
  3. This project will be completed in phases and thus the contractor is to make sure that all exits and entrances are accessible at all times. Coordinate the phasing in such a way that disruption to the occupants is kept to a minimum.

#### 1.11 OWNER OCCUPANCY



- A. The Owner may wish to occupy a portion of the building prior to full completion. Contractor will cooperate to maintain construction operations in this area to a minimum to avoid conflicts with Owner usage and operations.
  - 1. Refer to the project bidding schedule included in the bid documents for additional information.

#### 1.12 PROJECT SCHEDULE

- A. A project bidding schedule is included with these bid documents, which is solely for the purpose of informing the bidders of the "overall" projected schedule and milestone dates. A "Construction" Schedule will be developed by the General Contractor upon contract award per other sections of these Specifications.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 01 1000



## SECTION 01 2500 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. LEED Building General Requirements: The Owner requires the Contractor to implement practices and procedures to meet the project's environmental performance goals, which include achieving the equivalent of LEED Silver Certification. Specific project goals that may impact this area of work include: use of recycled-content materials; use of locally-manufactured materials; use of low-emitting materials; and construction waste recycling. The Contractor shall ensure that the requirements related to these goals, as defined in the sections below, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the stated LEED Building Performance Criteria. The Owner does not intend to apply for LEED Certification.
- C. Related Requirements:
  - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and assemblies which deviate from the requirements of the Contract Documents and proposed by Contractor which the Contractor deems will perform the same function and have equal capabilities, service life, economy of operations, and suitability for the intended purpose.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.
  - 3. The requirements for substitutions do not apply to specified Contractor options on products and construction methods. Revisions to Contract Documents, where requested by Owner or Architect are changes, not substitutions. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities do not constitute substitutions and do not constitute a basis for change orders. Otherwise, Contractor's requests for changes in products, materials, and methods of construction required by Contract Documents are considered requests for substitutions, and are subject to requirements hereto.



4. Any and all contractor substitutions that require additional work by other trades not specifically called for in the documents shall be paid for by the contractor requesting the substitution if any other trade increase is required.
5. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

### 1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit requests for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Requests: All requests for substitutions shall be submitted within 20 days of contract award, together with all supporting information,
  2. Substitution Request Form: Use the electronic version of form included as an attachment to this Section; submit in portable document format (.pdf).
  3. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures in .pdf format.
    - e. Samples, where applicable or requested.
    - f. Certificates and qualification data, where applicable or requested.
    - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES
    - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.



- k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
4. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order.

#### 1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

#### 1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.
- B. Should a substitution be rejected by the architect and owner, the contractor is to then provide the specified product, material or method as noted in the contract documents, at no additional cost to the Owner and no change in the project schedule.
- C. Substitutions may be permitted by the Architect, if, in his opinion, the requirements of the proposed substitution comply with the requirements specified for the material, article or piece of equipment.

### PART 2 - PRODUCTS

#### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 30 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:



- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Requested substitution does not require revisions to the Contract Documents.
- c. Requested substitution provides sustainable design characteristics that specified product provided for achieving LEED prerequisites and requirements.
- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified or superior warranty.
- j. Requested substitution can be used without adversely affecting Owner's insurance coverage on completed Work.
- k. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule; or if requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- l. Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- m. Maintenance service and source of replacement parts, as applicable, is available similar to the specified product.
- n. Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- o. Proposed substitution does not affect dimensions and functional clearances.
- p. Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 20 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.



- b. Requested substitution does not require revisions to the Contract Documents or, if revisions are required, the Contractor acknowledges that the cost of the Architect's redesign fee will be deducted from the Contract Price.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- d. Requested substitution provides sustainable design characteristics that specified product provided for achieving LEED prerequisites and requirements.
- e. Substitution request is fully documented and properly submitted.
- f. Requested substitution will not adversely affect Contractor's construction schedule.
- g. Requested substitution has received necessary approvals of authorities having jurisdiction.
- h. Requested substitution is compatible with other portions of the Work.
- i. Requested substitution has been coordinated with other portions of the Work.
- j. Requested substitution provides specified or superior warranty.
- k. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule; or if requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- l. Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- m. Maintenance service and source of replacement parts, as applicable, is available similar to the specified product.
- n. Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- o. Proposed substitution does not affect dimensions and functional clearances.
- p. Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

ATTACHMENT: SUBSTITUTION REQUEST FORM



## SECTION 01 2500A - SUBSTITUTION REQUEST FORM

( After the Bidding Phase)

Project: Project Name  
The College of New Jersey  
Project #

Substitution Request Number:

From:

Date:

Recipient

A/E Project Number:

Contract For:

Specification Title:

Description:

Section:

Page:

Article/Paragraph:

Proposed Substitution:

Manufacturer: \_\_\_\_\_ Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Trade Name: \_\_\_\_\_ Model No.: \_\_\_\_\_

Installer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☐ More than 10 years old

Differences between proposed substitution and specified product: \_\_\_\_\_

☒ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: \_\_\_\_\_

Similar Installations: Include List of Projects with name, address and phone number of Owner; name, address and phone number of Architect; and date installed

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain \_\_\_\_\_



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The Undersigned certifies:

- Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
- Requested substitution does not require revisions to the Contract Documents or, if revisions are required, the Contractor acknowledges that the cost of the Architect's redesign fee will be deducted from the Contract Price.
- Requested substitution is consistent with the Contract Documents and will produce indicated results.
- Substitution request is fully documented and properly submitted.
- Requested substitution will not adversely affect Contractor's construction schedule.
- Requested substitution has received necessary approvals of authorities having jurisdiction.
- Requested substitution is compatible with other portions of the Work.
- Requested substitution has been coordinated with other portions of the Work.
- Requested substitution provides specified or superior warranty.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule; or if requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Maintenance service and source of replacement parts, as applicable, is available similar to the specified product.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

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Signed by:

Submitted

by: Firm:

Address:

Telephone  
:

Attachments:

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A/E's REVIEW AND ACTION



## SECTION 01 2900 – PAYMENT PROCEDURES

### PART 1 - GENERAL

#### 1.1 SCHEDULE OF VALUES

- A. The Contractor shall prepare a schedule of values in coordination with the preparation of progress schedule. The percent complete on the schedule of values shall match the percent complete on the monthly updated project schedule. Correlate line items with other administrative schedules and forms required for the work, including progress schedule, payment request form, listing of subcontractors, schedule of allowances if any, schedule of alternates if any, listing of products and principal suppliers and fabricators, and schedule of submittals. Break down principal subcontract amounts into multiple line items for each entity of work. Round off to nearest whole dollar, but with total equal to Contract Sum. Submit 4 copies of schedule of values to the Project Manager and Architect for review and approval.
  - 1. Upon Owner/Architect approval, Owner will return the Schedule of Values to the contractor for the contractor to submit to the bonding company for their acceptance. Payments will not be made to the contractor until the bonding company has provided a written acceptance of the schedule of values to the owner.
- B. The schedule of values shall be tabulated into subcontracts and trades with the Quantity, Labor, Material, and Total Cost indicated. The Schedule of Values shall include such items as bonds, insurance, allowances and alternates, punch list/close out documents and shall enclose copies of invoices and/or cancelled checks from bonding and insurance agents.
- C. Schedule of values shall be submitted on AIA Form G703 or similar form approved by the Architect and Owner.
- D. Contractor's monthly application for payment shall be in the same schedule form, reflecting the same items from above. Unit costs shall be realistic for their part of the Work.

#### 1.2 CHANGES IN THE WORK

- A. When a change in the Work includes a category or categories of Work both added to and deducted from the Contract, the total quantities of added Work and of deleted Work shall be determined separately for each category and the appropriate unit price or net cost of the Work shall be applied to the difference between the two total quantities.
- B. Unit prices shall be inclusive of all costs and shall be applied to units of measure as defined in the Specifications for each category of Work.
- C. For all extra Work performed by Contractor, the gross cost to the Owner shall include the net cost of the Work to the Contractor plus an allowance for overhead and profit not to exceed 15% of the net cost.



- D. For all extra Work performed by a Subcontractor, the gross cost to the Owner shall include the net cost of the Work to the Subcontractor plus an allowance ("mark-up") for overhead and profit not to exceed 15% of the net cost, plus the Contractor's overhead and profit (mark-up) not to exceed 5% of the Subcontractor's cost. All "mark-up" includes bond and insurance costs.
- E. Net cost of extra Work shall be the actual or pro-rated cost of:
  - 1. Labor, including foreman, at the prevailing rate of wages, contributions and taxes.
  - 2. Materials entering permanently into the Work, including delivery to the site.
  - 3. The ownership or rental cost of construction equipment and expendable tools, pro-rated for the time necessary for the Work.
  - 4. Power and consumable supplies for the operation of power equipment, pro-rated for the time necessary for the Work.
- F. Gross costs shall be net costs plus the allowances (mark-up) described above, such mark-up allowances being inclusive of all costs associated with superintendence, supervision, engineering, overhead, profit, bond/insurance, administrative and site office expenses and all other general expenses.

### 1.3 APPLICATIONS FOR PAYMENT

- A. Except as otherwise indicated, sequence of progress payments for the Contractor shall be regular, and each shall be consistent with previous applications and payments. It is recognized that certain applications involve extra requirements, including initial applications, applications at times of substantial completion, and final payment applications.
- B. Payment Application Forms: Use AIA Document G702 and G703 Continuation Sheets; available from Publications Distribution Div., The American Institute of Architects, 1735 New York Ave., N.W., Washington, D.C. 20006 (also available at most local AIA chapter offices and on the internet) or approved equal.
- C. Except as otherwise indicated, complete every entry provided on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by Architect and Owner without action. Entries shall match current data of schedule of values, progress schedules and reports. Listing shall include amounts of fully executed change orders (and issued purchase orders) issued prior to first day of the period of construction covered by application. Contractor shall furnish to the Owner certified payroll reports for each payroll period, indicating name craft, social security number and actual hourly rate of wages paid to each workman employed on the project. A certified payroll record is defined as "a payroll record which is attested to by the employer, or corporate officer of such company, or an authorized agent of the employer."
- D. Submit one "pencil" copy of each proposed payment application to the Architect and Owner in the field on or before the 25<sup>th</sup> of each of month.



- E. Submit 4 executed final copies of each payment application to the Architects office on or before the 30<sup>th</sup> of each month. Transmit with a transmittal form listing attachments, and recording appropriate information related to application.
- F. Breakdown may include a line item for General Conditions. General Conditions shall include the cost of general supervision, trailers, temporary utilities and other general expenses directly related to the project and not considered overhead. The general conditions item shall be billed on monthly progress payments on a percentage of work completed.

#### 1.4 INITIAL PAYMENT APPLICATION

- A. The principal administrative actions and submittals which shall precede or coincide with submittal of the Contractor's first payment application can be summarized as follows, but not necessarily by way of limitation.
  - 1. Listing of subcontractors and principal suppliers and fabricators.
  - 2. Schedule of values.
  - 3. Schedule of principal products.
  - 4. Schedule of submittals (preliminary if not final).
  - 5. Copies of acquired building permits and similar authorizations and licenses from governing authorities for current performance of the work.
  - 6. Data needed by Owner to secure related insurance coverages.
  - 7. Performance and Payment Bond.
  - 8. Insurance Certificates.
  - 9. Bonding Company Acceptance of the Schedule of Values

#### 1.5 PROGRESS PAYMENTS

- A. Based upon application for payments submitted to the Architect and the Owner, by the Contractor, on or about the 25th day of each month for the period ending the last day of the previous second month, and Certificate of Payment issued by the Architect and the Owner, the Owner will make progress payments on account of the Contract Sum to the Contractor as follows:
  - 1. On or after the 25th day of each month, the Contractor shall submit to the Architect and Owner a "pencil copy" indicating the previous payment and the proposed amounts for each line item for the current period. After review and approval or changes, the Contractor shall prepare the final billing for presentation to the Architect and Owner.
  - 2. Withholding of Payments:
    - a. Whenever any contract, the total price of which exceeds \$100,000, entered into by a State college, for the construction, reconstruction, alteration or repair



of any building, structure, facility or other improvement to real property, requires the withholding of payment of a percentage of the amount of the contract, the contractor may agree to the withholding of payments in the manner prescribed in the contract, or may deposit with the State college registered book bonds, entry municipal bonds, State bonds or other appropriate bonds of the State of New Jersey, or negotiable bearer bonds or notes of any political subdivision of the State, the value of which is equal to the amount necessary to satisfy the amount that otherwise would be withheld pursuant to the terms of the contract. The nature and amount of the bonds or notes to be deposited shall be subject to approval by the State college. For purposes of this section, "value" shall mean par value or current market value, whichever is lower.

- b. If the contractor agrees to the withholding of payments, the amount withheld shall be deposited, with a banking institution or savings and loan association insured by an agency of the Federal government, in an account bearing interest at the rate currently paid by such institutions or associations on time or savings deposits. The amount withheld, or the bonds or notes deposited, and any interest accruing on such bonds or notes, shall be returned to the contractor upon fulfillment of the terms of the contract relating to such withholding. Any interest accruing on cash payments withheld shall be credited to the State college.
3. Any contract, the total price of which exceeds \$100,000, entered into by a State college involving the construction, reconstruction, alteration, repair or maintenance of any building, structure, facility or other improvement to real property, shall provide for partial payments to be made at least once each month as the work progresses, unless the contractor shall agree to deposit bonds with the State college pursuant to Paragraph 2 above.
4. With respect to any contract entered into by a State college for which the contractor shall agree to the withholding of payments, 2% of the amount due on each partial payment shall be withheld by the State college pending completion of the contract.
5. Upon acceptance of the work performed pursuant to the contract for which the contractor has agreed to the withholding of payments, all amounts being withheld by the State college shall be released and paid in full to the contractor within 45 days of the final acceptance date agreed upon by the contractor and the State college, without further withholding of any amounts for any purpose whatsoever, provided that the contract has been completed as indicated. If the State college requires maintenance security after acceptance of the work performed pursuant to the contract, such security shall be obtained in the form of a maintenance bond. The maintenance bond shall be no longer than two years and shall be no more than 100% of the project costs.
6. Upon substantial completion, the retainage shall, upon the Architect/Owner's approval, remain at 2% of the value of work completed and the Owner will assign a value to the incomplete work which shall be added to the 2% retainage. Final release of retained monies will occur only upon the total completion of all punch list and closeout documentation to the satisfaction of the Architect and Owner.



7. For each day's delay in the Contractor's submission of an application for payment acceptable to the Architect and Owner, the Owner may delay one day in making his progress payment.
8. Owner shall make payments within 45 days of receipt of said accepted pay requisition.

#### 1.6 APPLICATION AT TIME OF SUBSTANTIAL COMPLETION

- A. Following issuance of certificate of substantial completion on each Contractor's work, and also in part as applicable to prior certificates on portions of completed work as designated, a "special" payment application may be prepared and submitted by Contractor. The principal administrative actions and submittals which shall precede or coincide with such special applications can be summarized as follows, but not necessarily by way of limitation:
  1. Occupancy permits and similar approvals or certifications by governing authorities and franchised services, assuring Owner's full access and use of completed work.
  2. Warranties, guarantees, maintenance agreements and similar provisions of Contract Documents.
  3. Test/adjust/balance records, maintenance instructions, meter readings, start up performance reports, and similar change over information germane to Owner's occupancy, use, operation and maintenance of completed work.
  4. Final cleaning of the work.
  5. Advice to Owner on coordination of shifting insurance coverages, including proof of extended coverage as required.
  6. Listing of Contractor's incomplete work, recognized as exceptions to certificate of substantial completion.

#### 1.7 FINAL PAYMENT APPLICATION

- A. The administrative actions and submittals which shall precede or coincide with submittal of the Contractor's final payment application can be summarized as follows, but not necessarily by way of limitation.
  1. Completion of project closeout requirements.
  2. Completion of items specified for completion beyond time of substantial completion, regardless of whether special payment application was previously made.
  3. Assurance, satisfactory to Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
  4. Transmittal of required project construction records to Owner via the Architect.



5. Proof, satisfactory to Owner, that taxes, fees and similar obligations of Contractor have been paid.
6. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
7. Notarized consent of surety for final payment.
8. Complete all Owner's required forms as provided by the Owner's Representative.

#### 1.8 WAIVER OF LIENS

- A. Each Contractor, for himself, and for all Subcontractors and material men, agrees that no mechanic's lien or other claim shall be filed or maintained by the Contractor or by any Subcontractor, materialmen, laborer or any other person whatsoever for, or on account of any work performed or materials furnished under this Contract.
- B. In every subcontract entered into by each Contractor after execution of this Contract or in connection herewith, the Contractor shall incorporate a provision, similar to the foregoing paragraph, to the effect that neither the Subcontractor nor any party acting through or under him shall file or maintain any mechanic's lien or other claim against the Owner or Architect in connection with the Work.

END OF SECTION 01 2900



## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 SPECIAL REQUIREMENTS

- A. Schedule: General Contractor shall provide a master schedule showing sequencing of work utilizing the CPM method. The General Contractor shall supply a schedule with all subcontractor activities, relationships, and durations, utilizing the CPM method via SureTrak/Primavera or Microsoft Scheduling program to the Owner on a working version CDROM and also through the project management website, and coordinate their schedule with the Owner.
  - 1. The General Contractor is required to update at the end of each month the CPM Schedule based on the percentage completed for each activity on the approved schedule (in concert with the submission of the percentage completed in the monthly proposed schedule of values).
  - 2. The contractor will not be paid for that month's work without providing the Owner with an updated schedule each month.
- B. Coordination Drawings: Refer to Section 01 3115 for requirements for coordination drawings.
- C. Each Contractor shall take all necessary precautions to ensure the safety of all structural elements during all phases of all work. No materials, cranes, trucks or any other construction loads shall be placed on any part of the structure until the Contractor has determined the adequacy of that structure to carry the intended load without damage or overstress.
- D. Entrance into, or other use of the building will not be permitted except as may be necessary for the execution of the Work, and shall be subject to the restrictions and instructions of the Owner.
- E. Routes of ingress and egress to areas where work is being performed shall be subject to the restrictions and instructions of the Owner.
- F. Materials shall be moved through the Building using rubber tired vehicles which shall be properly controlled at all times to avoid damage to existing wall, floor or ceiling surfaces.
- G. Water damage cannot be tolerated and it is incumbent upon Contractors to take any steps necessary to keep the existing premises dry at all times.
- H. Any damage to adjacent buildings or the new construction from heavy equipment, striking the Building or any other damage to any part of the premises shall be repaired at the expense of the Contractors.
- I. All welding and cutting shall be performed by qualified and certified welders. Certificates shall be on file with the Contractor prior to commencement of any welding.



- J. No work shall start before 8:00am unless agreed to in advance with the Owner.

## 1.2 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
  - 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.3 REQUESTS FOR INFORMATION (RFIs)

- A. Requests for Information (RFI's) are requests for clarifications or questions regarding the contract drawings and specifications, not contract terms, scheduling items, or general correspondence, nor, are they to be as a means to describe or request approval of alternate construction means, methods or concepts or substitution for materials, systems means and methods.
  - 1. Carefully study and compare the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, and prior Project correspondence and documentation prior to submitting an Request for Information.
- B. Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  - 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- C. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  - 1. Project name.
  - 2. Project number.
  - 3. Date.
  - 4. Name of Contractor.



5. Name of Architect
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- D. RFI Forms: Architect will furnish electronic version of form bound in Project Manual.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. Based upon the amount of RFI's received and their level of content, the Architect will establish the level of importance of each RFI and allow sufficient time in the Architect's professional judgment to permit adequate review.
  2. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Architect's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.
  3. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
  4. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit a change proposal according to the General Conditions of the Contract
    - a. If the Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Owner in writing within 15 calendar days of receipt of the RFI response, otherwise it will be assumed there is no change in the Contract Time or Contract Sum..
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly; include the following: .



1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

- G. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

#### 1.4 PROJECT INFORMATION MANAGEMENT (PIM) SITE

- A. It is the intent to use the Architect's Project Information Management (PIM) software transmission server software for purposes of hosting and managing project communication and documentation until Final Completion. Project Information Management (PIM) software site includes the following functions:
1. Project directory.
  2. Project correspondence.
  3. Meeting minutes.
  4. Contract modifications forms and logs.
  5. RFI forms and logs.
  6. Task and issue management.
  7. Photo documentation.
  8. Schedule and calendar management.
  9. Submittals forms and logs..
  10. Payment application forms..
  11. Drawing and specification document hosting, viewing, and updating.
  12. Online document collaboration.
  13. Reminder and tracking functions.
  14. Archiving functions.
- B. Architect will provide Project Information Management (PIM) software user licenses for use of the Owner, Contractor, Architect, and Architect's consultants.
- C. The Architect may utilize a system similar to Newforma Project Center Project Information Management (PIM) software to track submittals and RFI's; Newforma recommends:
1. Computer
  2. Internet Connection: High speed connection recommended.
  3. Internet Explorer 8 or newer.
- D. Post electronic submittals as PDF electronic files directly to Architect's Newforma Project Center server, specifically established for Project.

#### PART 2 - PRODUCTS- (Not Used)



## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Contractors shall perform the work on or about the premises in a careful manner with full consideration to fire protection as required by the National Fire Protection Association Standards, National Board of Fire Underwriters and State and Local Departments having jurisdiction. Fire resistant materials shall be used for temporary enclosures.
- B. Chemical extinguishers approved by the Owner shall be provided by the General Contractor during the progress of the work where and as required by the Owner, the Local Fire Marshal and the National Board of Fire Underwriters.
- C. The General Contractor shall maintain an active program of fire prevention to keep workmen fire conscious during the entire life of the Contract. Designate one member of the organization to execute and coordinate fire control measures of his own organization and that of all subcontractors under his jurisdiction.
- D. All sub-contractors shall cooperate with the General Contractor in carrying out the above program.
- E. Storage of flammable materials will not be permitted in the Building unless written permission is obtained from the Owner. Storage of all such materials shall be the Contractors' responsibility.
- F. On-site open burning of rubbish, garbage, trade waste, leaves or plant life is prohibited.
- G. Safety Program: The General Contractor shall institute a safety program in accordance with OSHA and any local, state, or federal guidelines. The contractor shall name a safety officer to monitor this program and shall submit a safety report at job meetings.
- H. Stockpiling: Stockpiling of materials on site will be allowed (but limited due to the limited space on this site). Such materials shall not impair or impede the functioning of the facility. Materials stored on site shall be secured to prevent loss from theft, damage, vandalism or fire. By stockpiling materials on site, the contractor assumes full responsibility for said materials, and shall protect them to the fullest extent possible. Specific locations for stockpiling materials shall be coordinated with the Architect and Owner.
- I. Safety Barriers: The General Contractor shall erect safety barriers to deter and prohibit unauthorized access to the construction site; such barriers may take the form of fences and shall be clearly marked with signage prohibiting unauthorized access. The General Contractor shall be responsible for safety barriers within the building. The contractor shall be liable for damages to persons or property due to the construction process if adequate safety measures are not undertaken. The Owner and Architect shall review safety precautions for their adequacy but shall not be held liable for Contractors failure to maintain or provide adequate protection.
- J. Sequencing: The General Contractor will work with the Sub-Contractors to sequence the work during the submission of monthly project schedules. Contractors shall endeavor to coordinate their work efforts with the Owner's requirements. Interruptions of utility services



shall be coordinated with the Architect and Owner, but in no instance shall last longer than 2 hours.

### 3.2 PROGRESS MEETINGS

- A. Progress Meetings shall be held bi-weekly at the job site at a regular time and day mutually agreed upon. The frequency may be changed by the Architect or Owner to reflect current conditions. The Contractors, those of his/their subcontractors concerned with current progress or with scheduling of future progress, the Architect and the Owner shall each be represented at these job meetings by persons familiar with the details of the work and authorized to conclude matters relative to work progress, establishment of progress schedules, etc., as may be necessary to expedite completion of the work.
- B. The Contractors and his/their subcontractors attending these meetings shall present complete and definite reports as to the status of their respective work, conditions of product and equipment manufacturer, labor availability, productivity and cooperation, shipping data, time of completion, sequence of the work, safety program, and any other information bearing upon the execution of the Contract or subcontract.
- C. The Owner will chair the meetings and take meeting minutes

### 3.3 OTHER MEETINGS

- A. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 10 days after execution of the Agreement.
  - 1. Conduct the conference to review responsibilities and personnel assignments.
  - 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Discuss items of significance that could affect progress; follow the Owner's standard agenda.
  - 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- B. LEED Coordination Conference: Owner will schedule and conduct a LEED coordination conference before starting construction, at a time convenient to Owner, Architect, and Contractor.
  - 1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent and LEED coordinator; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Discuss items of significance including the following:
    - a. LEED Project Checklist.
    - b. General requirements for LEED-related procurement and documentation.



- c. Project closeout requirements.
  - d. Role of LEED coordinator.
  - e. Construction waste management.
  - f. Construction operations and LEED requirements and restrictions.
- 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner's Commissioning Authority of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. LEED requirements
    - i. Review of mockups.
    - j. Possible conflicts.
    - k. Compatibility requirements.
    - l. Time schedules.
    - m. Weather limitations.
    - n. Manufacturer's written instructions.
    - o. Warranty requirements.
    - p. Compatibility of materials.
    - q. Acceptability of substrates.
    - r. Temporary facilities and controls.
    - s. Space and access limitations.
    - t. Regulations of authorities having jurisdiction.
    - u. Testing and inspecting requirements.
    - v. Installation procedures.
    - w. Coordination with other work.
    - x. Required performance results.
    - y. Protection of adjacent work.
    - z. Protection of construction and personnel.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.



5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
  2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.
    - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    - c. Submittal of written warranties.
    - d. Requirements for completing LEED documentation.
    - e. Requirements for preparing operations and maintenance data.
    - f. Requirements for delivery of material samples, attic stock, and spare parts.
    - g. Requirements for demonstration and training.
    - h. Preparation of Contractor's punch list.
    - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    - j. Submittal procedures.
    - k. Coordination of separate contracts.
    - l. Owner's partial occupancy requirements.
    - m. Installation of Owner's furniture, fixtures, and equipment.
    - n. Responsibility for removing temporary facilities and controls.
  4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

### 3.4 MONTHLY REPORTS

- A. The Contractor is to provide the Owner a brief monthly status report on the last working day of each month dividing the status of the project into the following categories (report must be complete in all respects, piece meal submissions will not be accepted):
1. Project overview
  2. Financial status
  3. Updated project schedule
  4. Change order request log
  5. Submittal log
  6. RFI log
  7. Owner/Architect issues that need immediate resolution
  8. Order/delivery issues



END OF SECTION 01 3100

ATTACHMENT:

REQUEST FOR INFORMATION FORM (RFI) Form attached next page.



## REQUEST FOR INFORMATION (RFI)

Contractor Address Phone: Fax		Architect: Address  Phone:	
Project Name & No.: 1013016.01		Project Location	
RFI Number: 1	RFI Subject:	Date of Request:	Requested Date of Response:

☐ I have carefully studied and compared the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, and prior Project correspondence and documentation prior to submitting this Request for Information.

Sketches of Condition (Attach)	Spec Section: Page: Paragraph Ref.:	Drawing No. / Detail No.: Detail Ref.:
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### Question or Information Needed

### Contractor's Proposed Solution

Submitted By:

### Architects Response:

Response By:

Date of Response :

1. Refer to Section 01 3100 "Project Management and Coordination" for RFI procedures.
2. Responses from the Architect do not change any requirements of the Contract Documents.
3. The information provided in this RFI is for clarification purposes only. It shall not be interpreted as a change order, nor an extension of time.
4. Failure to Notify the Architect within 15 days of receipt of the response to this RFI shall indicate that there is no cost or additional time associated with the response.



## **SECTION 01 3115 – COORDINATION DRAWINGS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes preparation of coordination drawings for architectural, structural, mechanical, plumbing, fire protection, fire alarm, lighting, information technology, security, and electrical Work.
- B. Related Sections include the following:
  - 1. Division 01 Section "Project Management and Coordination" for administrative provisions for coordinating construction operations.
  - 2. Division 01 Section "Project Record Documents," for project record drawing requirements.
  - 3. Division 21, 22, 23, 26, 27 and 28 for additional requirements.

#### **1.2 DEFINITION AND INTENT**

- A. The Contract Drawings (mechanical, plumbing, electrical, and fire protection plans) are diagrammatic only and are not intended to show the alignment, exact physical locations, or configurations of such Work. Performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. Where possible, the Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing coordination drawings.
- B. Coordination drawings are drawings prepared by Contractor that superimpose Work of multiple trades involved in the construction process. Coordination drawings indicate systems and components to be installed by the Contractor to maximize clear height and free area in ceiling cavities, allow for proper and adequate equipment service clearances, minimize space required by shafts and chases and provide the most efficient functioning and use of materials possible while complying with the final performance and finished appearance required by the Contract Documents.
- C. Coordination drawings are intended to show the relationship and integration of different construction elements that require coordination during fabrication or installation to fit in the space provided, to function as intended, and to present the intended final finished appearance.
- D. Coordination Drawings are not a replacement for shop drawings specified in the technical specifications or the Record Drawings required in Division 01.
- E. The Contractor shall manage the process so that each trade/ sub contractor provides all required information in a timely manner. Coordination Drawings may be completed on a phased basis so as not to delay the overall project schedule. The CPM Schedule specified elsewhere in Division 01 Section "Construction Progress Documentation" shall include the submission of Coordination Drawings. The same shall demonstrate



how the Contractor intends to integrate the submission of Coordination Drawings to suit the overall project schedule. The Contractor shall pay all costs for reproducing copies of coordination drawings for use in the field.

### 1.3 CONTRACTOR'S USE OF ARCHITECT'S BIM FILES

- A. Refer to Division 01 Section "Submittal Procedures" for availability of Architect's BIM or CAD Background Drawings, required Electronic Data Transfer Agreement Between Architect and Contractor

### 1.4 SUBMITTALS

- A. Coordination Drawings: Prepare and submit as informational submittal within 120 days of Notice to Proceed.
- B. Submit coordination drawings in the same manner as shop drawings; refer to Section 01 3300 Submittal Procedures.

### 1.5 PROJECT CONDITIONS

- A. Maintain marked up set of coordination drawings at Project site available for reference by Owner and Architect.
- B. Maintain original BIM model used to produce coordination drawings updated with revisions to reflect actual construction. Make drawing revisions at time of change to construction; Transfer information to BIM no later than every 15 days.
- C. Failure to submit coordination drawings will result in no changes to contract sum for necessary corrections to uncoordinated work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 PREPARATION OF COORDINATION DRAWINGS MODEL

- A. Produce all coordination drawings using Revit compatible Building Information Modeling (BIM).
  - 1. Utilizing the Architect's base model, each trade shall add their respective information to construct one comprehensive model integrating all trade models for the project.
  - 2. Architectural Work Information Required in the BIM Model:
    - a. Items which are recessed into ceilings and ceiling plenums, or surface mounted to ceilings.
    - b. Anchorages, fastenings, and supporting for items recessed in, attached to, or suspended from ceilings or structure above ceilings.



- c. Firewalls, Fire Barrier, Fire partitions and smoke partitions on coordination drawings for coordination of life safety requirements.
3. Plumbing Work Information Required in the BIM Model:
- a. Sizes and bottom elevations of piping with insulation thickness included.
  - b. Dimensions of major components, such valves, access doors and cleanouts.
  - c. Fire-rated enclosures around piping
  - d. Support of all roof mounted plumbing piping and equipment.
  - e. Required space to install, service and maintain all plumbing mechanical items and systems.
4. HVAC Work Information Required in the BIM Model:
- a. Sizes and bottom elevations of ductwork, piping with insulation thickness included.
  - b. Fire dampers.
  - c. Acoustical lining in ductwork.
  - d. Identification of ductwork pressure class.
  - e. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
  - f. Fire-rated enclosures around ductwork.
  - g. Support of all roof mounted HVAC piping and equipment.
  - h. Required space to install, service and maintain all HVAC items and systems.
5. Electrical Work Information Required in the BIM Model:
- a. Electrical Work, including telecommunications, data, security, lighting and fire alarm systems.
  - b. Runs of vertical and horizontal conduit 1-1/4-inch diameter and larger.
  - c. Light fixture locations.
  - d. Emergency egress light locations.
  - e. Smoke detector, and other fire alarm device locations.
  - f. Panelboard, switchboard, transformer, cable tray, and motor control center, and exit signs.
  - g. Location of pull boxes and junction boxes, dimensioned from column center lines.
  - h. Bottom elevation of all conduit runs 1-1/4 -inch diameter and larger and of all cable trays.
  - i. Support of all roof mounted conduit and photovoltaic equipment, cameras, and security system devices.
  - j. Required space to install, service and maintain all electrical items and systems.
  - k. Lightning protection.
6. Fire Protection System Information Required in the BIM Model:



- a. Locations of standpipes, valves, mains piping, branch lines, pipe drops, and sprinkler heads.
  - b. Bottom elevation of main and branch lines.
- 7. Structural Work Information Required in the BIM Model:
  - a. Ceiling system.
  - b. Openings and sleeve locations required in slabs, walls, beams and other structural elements, including required openings not indicated on Contract Documents.
  - c. Slab edge locations and locations of sleeves dimensioned from building lines and floor lines.
- 8. Ceiling Systems and Plenum Space in the BIM Model:
  - a. For mechanical, plumbing, fire protection, fire alarm, electrical, controls, and telecommunications Work penetrating acoustical ceilings, show locations of each item (including sprinkler heads, diffusers, grilles, access doors, light fixtures, smoke detectors, exit signs, speakers, and other visible ceiling mounted devices) relative to acoustical ceiling grid or to wall in gypsum board ceilings.
  - b. Locate components within ceiling plenums to maximize clear area for future installations of lights and equipment.
  - c. Clearly indicate areas of conflict between light fixtures, diffusers and grilles and plenum boxes and other components on coordination drawings.
  - d. Draw elements to dimensions appropriate for products to be installed. Use of symbols is not acceptable.
- 9.

### 3.2 TRADE CONFLICTS

- A. Utilize clash detection software to indicate areas of conflicts and obstacles.
  - 1. Utilize computerized clash detection to identify trade conflicts as well as clashes within each trade, until all trades conflicts are fully coordinated.
  - 2. The Contractor shall then have the trade(s) revise their respective BIM models to eliminate the collisions and interferences.
  - 3. Contractor and each trade Contractor shall approve the Coordination drawings in writing indicating approval of installation coordination and clearances
- B. Each trade Contractor shall determine that all work can be installed without interference.
- C. In the case of unresolved clash, the Contractor shall notify the Architect. The Architect will then suggest to the Contractor as to how to revise the BIM model to eliminate the interference.
  - 1. Submit a clash report identifying all the clashes and conflicts between trade systems.



### 3.3 PREPARATION OF COORDINATION DRAWINGS

#### A. Organize coordination drawing submittals as follows:

1. Floor Plans: Provide floor plans and reflected ceiling plans for all floors. Show architectural, structural, mechanical, plumbing, fire protection, fire alarm, electrical, and telecommunications elements on floor plans and reflected ceiling plans.
2. Equipment Rooms and Spaces: Provide large scale drawings for equipment rooms and spaces showing plans and elevations of mechanical, plumbing, fire protection, electrical, and telecommunications equipment.
3. Structural Penetrations: Provide coordination drawings for each floor indicating penetrations and openings required for all trades.
4. In public and occupied areas without scheduled finish ceilings, appearance is a major coordination factor. Reposition proposed locations of work after Coordination Drawing review by the Architect. Provide adjustments to the exact size, location and offsets of ducts, pipes, and conduit to achieve reasonable appearance objectives. Provide these adjustments as part of the Contract or notify the Architect immediately as to why the adjustment cannot be made.

#### B. Prepare coordination drawings to a scale of 1/4" = 1'- 0" or larger (1/2"= 1'-0" for mechanical room plans); detailing major elements, components, and systems of mechanical equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the Work, including (but not necessarily limited to) the following:

1. Detail complex areas at larger scale than typical floor plans.
2. Use a common architectural layout as background.
3. Indicate ductwork, pipes with 6-inch diameter and greater, and conduits with 3-inch diameter and greater by double lines. Use single lines for smaller mechanical piping and all electrical conduits. Draw piping, ductwork, lighting fixtures, and cable trays in scale.
4. Circle and clearly note deviations from Contract Documents with reason for deviation stated.
5. Provide name of representative of each subcontractor whose Work is indicated on coordination drawings, verifying their review and approval that their Work has been coordinated with each other trade and with architectural and structural Work.

END OF SECTION 01 3115



## **SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Daily construction reports.
  - 2. Site condition reports.
  - 3. Special reports.
- B. Related Requirements:
  - 1. General Conditions, Section 013100 and Section 013300 for requirements relating to preparation and submission of Contractor's construction schedule.
  - 2. Section 01 3300 "Submittal Procedures" for submitting schedules and reports.
  - 3. Section 01 4000 "Quality Requirements" for submitting a schedule of tests and inspections.
  - 4. Section 01 7419 "Construction Waste Management and Disposal" for submitting LEED documentation.

#### **1.2 INFORMATIONAL SUBMITTALS**

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. PDF electronic file.
- B. Daily Construction Reports: Submit at monthly intervals.
- C. Site Condition Reports: Submit at time of discovery of differing conditions.
- D. Special Reports: Submit at time of unusual event.

### **PART 2 - PRODUCTS**

#### **2.1 REPORTS**

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  - 1. List of subcontractors at Project site.
  - 2. List of separate contractors at Project site.
  - 3. Approximate count of personnel at Project site.
  - 4. Equipment at Project site.
  - 5. Material deliveries.
  - 6. High and low temperatures and general weather conditions, including presence of rain or snow.



7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Field Orders received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions.

## 2.2 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION – Not used.

END OF SECTION 01 3200



## SECTION 01 3233 – PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following work by the General Contractor (other contractors are encouraged to document the site and construction, but not required):
  - 1. Preconstruction photographs.
  - 2. Preconstruction videos.
  - 3. Construction Progress Photo's

#### 1.2 SUBMITTALS

- A. Qualification Data: For photographer.
- B. Key Plan: Submit key plan of Project site and buildings with notation of vantage points marked for location and direction of each photograph and video. Indicate elevation or story of construction. Include same label information as corresponding set of photographs or video.
- C. Construction Photographs: Submit two prints of each photographic view monthly
  - 1. Format: 8-by-10-inch smooth-surface matte prints on single-weight commercial-grade photographic paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
  - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of project.
    - b. Name and address of photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier.
  - 3. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
- D. DVD's: Submit 3 copies of each DVD with protective sleeve or case within seven days of recording. .



1. Identification: On each copy, provide an applied label with the following information:
  - a. Name of Project.
  - b. Name and address of photographer.
  - c. Name of Architect.
  - d. Name of Contractor.
  - e. Date video was recorded.
  - f. Description of vantage point, indicating location, direction (by encompass point), and elevation or story of construction.
  - g. Weather conditions at time of recording.
2. Transcript: Prepared on 8-1/2 by 11-inch paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a coversheet with same label information as corresponding video. Include name of Project and date of video on each page.

### 1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction products for not less than three years.

### 1.4 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

### 1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### 1.6 EXTRA PRINTS

- A. Extra Prints: If requested by Architect or Owner, photographer shall prepare extra prints of photographs. Photographer shall distribute these prints directly to designated parties who will pay the costs for extra prints.

## PART 2 - PRODUCTS

### 2.1 PHOTOGRAPHIC MEDIA

- A. Photographic Film: Medium format, 2-1/4 by 2-1/4 inches.
- B. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200 pixels.
- C. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to the Owner.



## PART 3 - EXECUTION

### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified commercial photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of photographs that identifies each photographic location.
- C. Film Images:
  - 1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
  - 2. Field Office Prints: Retain one set of prints of photographs in the field office at Project site, available at all times for reference.
- D. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in filename for each image.
  - 2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference.
- E. Preconstruction Photographs: Before commencement of excavation, commencement of demolition, or starting construction, take color and digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
  - 1. Flag excavation areas and construction limits before taking construction photographs.
  - 2. Take 20 photographs of each existing building to accurately record physical conditions at start of excavation, demolition, or construction.
  - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- F. Construction Progress Photographs: Provide monthly progress photographs of the project. Unless otherwise specified in the supplemental general requirements, four photographs shall be submitted each month which provide views of the project taken from the same four points each month which will be selected by the Architect
- G. Additional Photographs: The Owner may issue requests for additional photographs, in addition to photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
  - 1. Three days' notice will be given, where feasible.
  - 2. In emergency situations, take additional photographs within 24 hours of request.



3. Circumstances that could require additional photographs include, but are not limited to, the following:
  - a. Special events planned at Project site.
  - b. Immediate follow-up when on-site events result in construction damage or losses.
  - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not submit to unit prices or unit-cost allowances.
  - d. Substantial Completion of a major phase or component of the Work.
  - e. Extra record photographs at time of final acceptance.
  - f. Owner's request for special publicity photographs.

### 3.2 CONSTRUCTION DIGITAL VIDEO

- A. Video Photographer: Engage a qualified commercial videographer to record construction video.
- B. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video, record weather conditions from local newspaper or television and the actual temperature reading at Project site.
- C. Narration: Describe scenes on video by audio narration by microphone while video is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.
  1. Confirm date and time at beginning and end of recording.
  2. Begin each video with name of Project, Contractor's name, videographer's name, and Project location.
- D. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video opposite the corresponding narration segment.
- E. Preconstruction Video: Before starting excavation, demolition, or construction record video of Project site and surrounding properties from different vantage points.
  1. Flag excavation areas before recording construction video.
  2. Show existing conditions adjacent to Project site before starting the Work.
  3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of excavation, demolition, or construction.
  4. Show protection efforts by Contractor.
- F. Construction Progress Videos: Provide monthly progress videos of the project. Provide one progress video, 15 minutes long, submitted each month. Video shall show the videographer walking and recording the site, each floor and the roof.

END OF SECTION 01 3233



## SECTION 01 3300 – SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

#### 1.2 PROGRESS SCHEDULE / COORDINATION DRAWINGS

- A. The General Contractor's schedule, shall coordinate with all trades to produce a coordinated CPM via Suretrak/Primavera or a Microsoft Scheduling program. The schedule shall indicate the start and completion dates for each portion of the work as defined by the schedule of values, with the total time as defined by the contract time and milestone dates as set forth in these specifications. The General Contractor's CPM schedule shall be submitted in electronic format to the Owner and Architect prior to first application for payment Contractor will not be paid until the schedule has been submitted and accepted by the Owner. Any revisions or additional information requested by the Owner or Architect shall be provided. (No payment shall be made to any Contractor not providing a schedule that reflects their entire work).
  - 1. Also refer to Section 01 3100 – Project Management and Coordination.
- B. General Contractor shall prepare coordination drawings for submission to Architect and Owner. Mechanical Contractor shall submit the ductwork drawings and each contractor shall prepare their own coordination drawings (as an overlay of ductwork drawings) and submit to General Contractor for final coordination within ninety (90) calendar days from Notice to Proceed. General Contractor shall submit coordination drawings to Architect and Owner within 120 days of Notice to Proceed. Failure to submit these drawings will result in no changes to contract sum for necessary corrections due to uncoordinated work.
  - 1. Also refer to Section 01 3100 – Project Management and Coordination.
- C. The General Contractor shall revise the progress schedule on a monthly basis as the work progresses reflecting therein any delays, including those not within the Contractor's control, or accelerations in the progress of the work. The progress schedule, as revised for any weekly period, shall be discussed at every job meeting with the Owner, Project Manager, the Architect, and the General Contractor and the major trades in order to insure that the percentage of actual completion of any portion of the work as called for in the progress schedule for that bi-weekly period is attained. Monthly updates to the progress schedule shall be made prior to application for payment.



- D. Should any delay occur in the progress of the work or any portion thereof, the Contractors shall be required to implement all necessary measures to accelerate the construction, to meet the percentages of completion dictated by the progress schedule on the applicable dates, without additional cost to the Owner.
- E. Each Contractor will have to provide a schedule based upon "Resource Loading" for all critical activities when requested for by the Owner.

### 1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
  - 2. Allow sufficient processing time; as a minimum, as indicated in this Section.
  - 3. Initial Submittal: Submit concurrently with initial submission of construction schedule (refer to Paragraph 1.2.A of this section for timeframe). Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 4. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
    - b. Contractor is to provide a submittal schedule identifying the critical path submittals to assist the design team in prioritizing their review and subsequent return to the contractor prior to the first requisition for payment being processed. Every submittal is to have a required return date associated with it so the design team can schedule their reviews accordingly.
  - 5. Format: Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Specification Section number and title.
    - c. Submittal category: Action; informational.
    - d. Name of subcontractor.
    - e. Description of the Work covered.
    - f. Scheduled date for Architect's final release or approval.
    - g. Scheduled date of fabrication.
    - h. Scheduled dates for purchasing.
    - i. Scheduled dates for installation.
    - j. Activity or event number.
- B. Architect will review Submittal Schedule for concentrations, overloading and similar conflicts which will impact the Architect's ability to meet the schedule and propose revisions to the duration of processing time to the Contractor.



- C. No payment will be made to Contractor (except for insurance, bonds and mobilization costs) until complete Schedule of Submittal with critical path submittals has been received and accepted by Owner and Architect.
- D. The Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals if the Contractor fails to submit a Submittal Schedule showing the critical path submittals and adhere to said schedule.

#### 1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

##### A. Architect's Digital Data Files:

1. Any request for digital data files shall be solely and exclusively for use related to this Project.
2. Building Information Modeling (BIM): At the Contractor's written request, electronic data files of the BIM Model will be available from the Architect as a convenience to the Contractor for use in preparing shop drawings and coordination drawings for this Project in accordance with the attached Electronic Data Order Form and following:
  - a. To the extent the Architect chooses to utilize BIM software, it shall be for the Architects use in developing the Instruments of Service.
  - b. BIM files were created by the Architect for the primary purpose of creating 2D contract documents. No implication is intended for any purpose beyond the production of 2D documents.
  - c. BIM Digital Data Files will be available to the contractor, subcontractor or supplier on written request to the Architect in accordance with this Section.
3. AutoCAD: At the Contractor's written request, Digital Data Files of the Floor Plan Background Drawings in editable file format will be available from the Architect as a convenience to the Contractor for use in preparing shop drawings for this Project in accordance with the attached Electronic Data Order Form and following:
  - a. AutoCAD 2018 file (editable file format) of documents indicated above will be available to the contractor, subcontractor or supplier on written request to the Architect in accordance with this Section.
  - b. Floor Plan Background Drawings as defined in the attached Electronic Data Order Form are available as a convenience to the Contractor.
  - c. Floor Plan Background Drawings files requested will be delivered in editable file format indicated, and will not be further altered by the Architect prior to delivering them to any said party.
4. Electronic Data Order Procedure:
  - a. Submit completed Electronic Data Order Form attached to this Section to the Architect's representative in .pdf format.
  - b. The Architect's representative will complete the CAD or BIM Digital Data Transfer Agreement between Architect and Contractor or Subcontractor and send it to the requesting entity for signature.
  - c. The requesting entity shall sign the Agreement and return it to the Architect in .pdf format.
5. Each contractor, subcontractor, trade, supplier or entity requesting electronic data file shall submit a request for Electronic Data Files, prior to delivery of said files. No



contractor, subcontractor, trade, supplier or entity shall transfer these Electronic Files received from the Architect, or any portion thereof to any third party ("Transferee") without written permission of the Architect.

6. The Architect will transfer files to the requesting entity via the Project Information Management (PIM) software.
7. All files are a schematic representation of elements within the project. All Contractors are responsible for field verification and coordination with other trades.
8. Use of these files does not relieve the Contractor from producing Coordination Drawings and Shop Drawings required by the Contract.

#### 1.5 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Shop drawings, product data and samples will not be processed by the Owner and/or Architect until the list of subcontractors, material suppliers and fabricators is submitted.
- B. The Architect shall be compensated on an hourly basis for review of all shop drawings or samples that do not meet the requirements of the contract documents after two submissions. The compensation shall be deducted from the contractors contract via a deduct change order, or other means that both parties agree to.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Processing Time: Allow sufficient time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  1. Initial Review: Allow 10 days for initial review of each submittal by the design team and an additional week for the Owner's review. Allow additional time if coordination with subsequent submittals is required, and for coordination of multiple components of a submittal in a substantial submittal package. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Resubmittal Review: Allow 10 days for review of each resubmittal and one week for the Owner's review.
  3. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 10 days for initial review of each submittal



- E. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Place fully executed "Submittal Cover Sheet" attached to the end of this Section as first page of every paper submittal.
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of subcontractor.
    - f. Name of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification.
  4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
    - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect .
  5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
    - a. Transmittal Form for Paper Submittals: Use form acceptable to Architect and Owner.
    - b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
      - 1) Project name.
      - 2) Date.
      - 3) Destination (To:).
      - 4) Source (From:).
      - 5) Name and address of Architect.
      - 6) Name of Contractor.
      - 7) Name of firm or entity that prepared submittal.
      - 8) Names of subcontractor, manufacturer, and supplier.



- 9) Category and type of submittal.
- 10) Submittal purpose and description.
- 11) Specification Section number and title.
- 12) Specification paragraph number or drawing designation and generic name for each of multiple items.
- 13) Drawing number and detail references, as appropriate.
- 14) Indication of full or partial submittal.
- 15) Remarks.
- 16) Signature of transmitter.

F. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
  - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
3. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software or electronic form acceptable to Owner, containing the following information:
  - a. Project name.
  - b. Date.
  - c. Name and address of Architect.
  - d. Name of Contractor.
  - e. Name of firm or entity that prepared submittal.
  - f. Names of subcontractor, manufacturer, and supplier.
  - g. Category and type of submittal.
  - h. Submittal purpose and description.
  - i. Specification Section number and title.
  - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
  - k. Drawing number and detail references, as appropriate.
  - l. Location(s) where product is to be installed, as appropriate.
  - m. Related physical samples submitted directly.
  - n. Indication of full or partial submittal.
  - o. Submittal and transmittal distribution record.
  - p. Other necessary identification.
  - q. Remarks.

G. Options: Identify options requiring selection by Architect.



- H. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal
- I. Each submission shall be complete, with all options clearly marked and with all components required for the assembly fully described and detailed. Submissions missing important information will be returned unchecked.
- J. Except as otherwise indicated in individual work sections, comply with requirements specified herein for each indicated category of submittal. Provide and process intermediate submittals, where required between initial and final, similar to initial submittals.
- K. Maintain returned final set of samples at project site, in suitable condition and available for quality control comparisons by the Architect, and by Owner.
- L. Do not proceed with installation of materials, products or systems until final copy of applicable shop drawings, product data and samples are in possession of Installer.
- M. Contractor's submittal of, and Architect's acceptance of, shop drawings, product data or samples which indicate work not complying with requirements of Contract Documents, does not constitute an acceptable and valid request for, nor approval of, a substitution.
- N. Resubmittals: Make resubmittals in same form and manner as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- O. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- P. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.
- Q. Submittals will be accepted from the Contractor only. Submittals received from other entities will be returned without review or action.
  - 1. Submittals received without a transmittal form will be returned without review or action.

## 1.6 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.



1. Post electronic submittals as PDF electronic files directly to Architect's project information transmission web based software specifically established for Project.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  2. Action Submittals: Submit electronic file except where paper copies of submittals are specifically required.
  3. Informational Submittals: Submit electronic file except where paper copies of submittals are specifically required.
  4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
  3. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
    - b. In addition to submission of electronic files, submit 3 paper copies of fire alarm shop drawings and sprinkler shop drawings with Contractor approval stamps applied, signed and sealed by a NJ licensed engineer, for submittal to College Code Review for review and comment.
    - c. Additional copies of submittals may have to be provided for the Owner's insurance review (i.e. Factory Mutual).
- C. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:



- a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before or concurrent with Samples.
  6. Submit Product Data in the following format:
    - a. PDF electronic file.
  7. Use a form matching the sample form attached to this section.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
    - e. Specification paragraph number and generic name of each item.
  3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.



- a. Number of Samples: Submit three full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, will return submittal with options selected.
- 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - a. Number of Samples: Submit sets of Samples. Architect will retain two Sample sets; remainder will be returned.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  - 2. Manufacturer and product name, and model number if applicable.
  - 3. Number and name of room or space.
  - 4. Location within room or space.
  - 5. Submit product schedule in the following format:
    - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013115 "Coordination Drawings."
- G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 4000 "Quality Requirements."
- H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 7700 "Closeout Procedures."
- I. Maintenance Data: Comply with requirements specified in Section 01 7823 "Operation and Maintenance Data."
- J. LEED Submittals: Comply with requirements specified in Section 018113 "Sustainable Design Requirements - LEED" and individual specification sections.



- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed



before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

- V. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

#### 1.7 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
- C. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services

#### 1.8 COLOR SELECTIONS

- A. All colors for all finished surfaces and materials will be selected or approved by the Architect. The color selections will be made at one time to provide a complete and coordinated color schedule which, upon acceptance of the Owner, will be provided to the Contractor. Any and all specific color selections for materials not noted on drawings or in specification shall be chosen by Architect after submittal of samples.
- B. It is imperative that all color information be submitted to the Architect by the Contractor before color selections can be made. If any color selection information is not available when colors are needed to meet the project schedule, the Architect will select colors from one of the named manufacturers in the Specifications, and the Contractor will be required to exactly match that color. A claim for delay will not be accepted if the color schedule is late due to the failure of the Contractor to provide the Architect with all required color information, nor will an extra be entertained if the selected color is not available from the manufacturer the Contractor intended to use but neglected to submit.

#### 1.9 MISCELLANEOUS SUBMITTALS



- A. Miscellaneous submittals related directly to the work include warranties, maintenance agreements, workmanship bonds, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.
- B. Refer to sections for specific general requirements on warranties, product/workmanship bonds, and maintenance agreements. In addition to copies desired for Contractor's use, furnish 3 executed copies, except furnish one additional copy where required for operation and maintenance manuals.
- C. For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

## PART 2 - PRODUCTS (not applicable)

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect .
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 7700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Architect's Actions:
  - 1. Contractor may proceed with fabrication on submittals marked "No Exception Taken" or "Make Corrections Noted" provided that the Contractor adheres to the corrections noted.



2. Contractor may proceed with fabrication on submittals marked "Resubmit for Record Only" provided that the Contractor makes the corrections noted and resubmits submittals for record purposes.
  3. Contractor may not proceed with fabrication on shop drawings noted "Revise and Resubmit" or "Rejected" until "No Exception Taken" or "Make Corrections Noted" stamp is received on resubmitted drawing.
  4. Contractor may not proceed with fabrication on the specific shop drawings noted "Partial Resubmit" until "No Exception Taken" or "Make Corrections Noted" stamp is received on resubmitted drawing.
  5. Do not permit submittals marked "Revise and Resubmit," or "Rejected," to be used at Project site, or elsewhere where Work is in progress.
  6. Other Action: Where submittal is primarily for information or record purposes, special processing or other activity, submittal will be returned, marked "No Action Taken."
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- F. Submittals not required by the Contract Documents may be returned by the Architect without action.

### 3.3 CONTRACTOR'S ACTION

- A. One copy of all submissions will be returned to the Contractor for his files. The Contractor shall mark up other copies so as to conform with the copy returned to him and forward them to all interested Contractors, Subcontractors, and Suppliers.

### 3.4 DISTRIBUTION

- A. Provide additional distribution of submittals, not included in foregoing copy submittal requirements, to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in transmittal to Architect where required to receive Action marking before final distribution. Show such distributions on transmittal forms.

END OF SECTION 01 3300

#### ATTACHMENTS:

- Submittal Cover Sheet
- Electronic Data Transfer Agreement For Building Information Modeling (BIM) Files Between Architect and Contractor
- Electronic Data Transfer Agreement For CAD Files Between Architect and Contractor
- Electronic Data Order Form



## SUBMITTAL COVER SHEET

CONTRACTOR: \_\_\_\_\_  
STREET ADDRESS: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_  
CONTRACTOR'S PROJECT NO: \_\_\_\_\_ SUBMITTAL NO: \_\_\_\_\_

DATE OF SUBMITTAL: \_\_\_\_\_ SUBCONTRACTOR: \_\_\_\_\_

SUBMITTAL DESCRIPTION: \_\_\_\_\_ RESUBMITTAL: ☐Y ☐N  
SUBSTITUTION: ☐Y ☐N

SHOP DRAWING TITLE: \_\_\_\_\_

NO. \_\_\_\_\_ REVISION NO. \_\_\_\_\_ DATE: \_\_\_\_\_

PRODUCT DATA, TESTS, SCHEDULES: \_\_\_\_\_

SAMPLES: \_\_\_\_\_

MANUFACTURER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

REFERENCES: \_\_\_\_\_

SPECIFICATION SECTION - PAGE: \_\_\_\_\_ PARAGRAPH(S): \_\_\_\_\_

CONTRACT DRAWINGS(S): \_\_\_\_\_ ROOM NO.(S): \_\_\_\_\_

CONTRACTOR'S STAMP:

ARCHITECT'S STAMP:

REMARKS: \_\_\_\_\_



Project Name  
The College of New Jersey  
Project #

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Type Date Here

[Address]

Re: Electronic Data Transfer Agreement for BIM Model, Between Architect and Contractor  
The College of New Jersey, Project Name

Dear [Addressee's Name]:

Pursuant to the request of \_\_\_\_\_ (“Owner”), \_\_\_\_\_ (“Architect”) will deliver to \_\_\_\_\_ (“Contractor”) certain electronic files (such files and any and all drawings, models, data, and other information contained in the files are collectively referred to as the “Files”) for Contractor’s use in connection with the above project (“Project”), subject to the following terms and conditions.

These Files are components of the Architect’s Instrument of Service and not products. They are transmitted for the Owner’s benefit on this Project. Delivery of the Files to Contractor shall not be deemed to be a sale by Architect. Architect makes no representations or warranties whatsoever regarding the Files, including, without limitation, any representations or warranties of merchantability or fitness for any purpose. All rights to the Files, including all rights under the copyright and other laws, and the material objects in which the rights are embodied, are and shall be owned by Owner. Transfer of the information does not transfer any license to use the underlying software or obligate the Architect to provide the software to the recipient. The Architect retains the right to reuse the information in the general course of a professional practice.

This Agreement provides the Contractor with a nonexclusive, limited license to use the information in the Files for the specific purpose of responding to the requirements of the Contract Documents for this Project. Except as necessary to respond to the requirements of the Contract Documents for this Project, Contractor shall not reproduce the Files or any portion thereof, create any derivations of the Files, or otherwise modify them. Receipt and use of the electronic data does not relieve the recipient of any responsibility or obligation. Contractor shall treat the information contained in the Files as proprietary and confidential. Contractor understands that protection of the information is of vital importance and shall maintain in confidence all such information and not use the information outside of the scope of the Project prior or subsequent to the duration of the Project. The Contractor shall not transfer the Files or any portion thereof to any third party (“Transferee”). Trade contractors and subcontractors must execute their own Electronic Data File Agreement.





[Addressee's Name]

[Date]

Page 2

The Files are not Contract Documents for the Project. Only hard copy documents are Contract Documents. If any discrepancies exist at any time between the Files and the Contract Documents the Contract Documents shall control. **These BIM files were created by the designers for the primary purpose of creating 2D contract documents. No implication is intended for any purpose beyond the production of 2D documents.** Contractor shall be responsible for updating the Files throughout the course of the Project or requesting updated electronic files (if they exist) by executing a new Electronic File Data Agreement and paying an additional service fee for each requested file.

A complete list of the Files to be delivered to Contractor, including their dates and sizes, is attached. The Files are electronic source material for Contract Documents current as of **[Date files were recorded for transfer]**. Architect shall transmit the Files to Contractor in electronic form as Revit 2013 format files. Use of the electronic data is at the sole risk of the recipient, who acknowledges that the electronic data is subject to undetectable alteration or electronic corruption or degradation. Upon acceptance, Contractor shall waive any right to claims for detrimental reliance upon the information contained in the File.

Contractor acknowledges it has no contractual relationship with Architect or any relationship that is the functional equivalent of privity of contract, other than this letter agreement. Contractor shall hold Architect harmless from and against any and all losses, damages, costs, claims and any other liability relating directly or indirectly to the subject matter of this agreement. In no event shall Architect's liability exceed the amount of service fee payment made under this agreement. This agreement shall be binding upon and inure to the benefit of the successors and assigns of the parties. Contractor shall not assign or otherwise transfer this agreement to any third party without the prior written consent of Architect.

Please sign below, indicating acceptance of these terms, and return one copy of the signed letter to me. Upon receipt of the signed letter and the above fee, we will transmit the Files to you.

Very truly yours,

**Architect/Engineer Name**

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

**[Name of Contractor's Representative]**

Contractor's Representative

\_\_\_\_\_

\_\_\_\_\_





[Addressee's Name]

[Date]

Page 3

*Signature*

*Date*

cc: [CA Person for Project]





Project Name  
The College of New Jersey  
Project #

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Type Date Here

[Address]

Re: Electronic Data Transfer Agreement for AutoCAD files, Between Architect and Contractor  
[Project Number], [Project Name]

Dear [Addressee's Name]:

Pursuant to the request of \_\_\_\_\_ (“Owner”), \_\_\_\_\_ (“Architect”) will deliver to \_\_\_\_\_ (“Contractor”) certain electronic files (such files and any and all drawings, data, and other information contained in the files are collectively referred to as the “Files”) for Contractor’s use in connection with the above project (“Project”), subject to the following terms and conditions.

These Files are components of the Architect’s Instrument of Service and not products. They are transmitted for the Owner’s benefit on this Project. Delivery of the Files to Contractor shall not be deemed to be a sale by Architect. Architect makes no representations or warranties whatsoever regarding the Files, including, without limitation, any representations or warranties of merchantability or fitness for any purpose. All rights to the Files, including all rights under the copyright and other laws, and the material objects in which the rights are embodied, are and shall be owned by Owner. Transfer of the information does not transfer any license to use the underlying software or obligate the Architect to provide the software to the recipient. The Architect retains the right to reuse the information in the general course of professional practice.

This Agreement provides the Contractor with a nonexclusive, limited license to use the information in the Files for the specific purpose of responding to the requirements of the Contract Documents for this Project. Except as necessary to respond to the requirements of the Contract Documents for this Project, Contractor shall not reproduce the Files or any portion thereof, create any derivations of the Files, or otherwise modify them. Receipt and use of the electronic data does not relieve the recipient of any responsibility or obligation. Contractor shall treat the information contained in the Files as proprietary and confidential. Contractor understands that protection of the information is of vital importance and shall maintain in confidence all such information and not use the information outside of the scope of the Project prior or subsequent to the duration of the Project. The Contractor shall not transfer the Files or any portion thereof to any third party (“Transferee”). Trade contractors and subcontractors must execute their own Electronic Data File Agreement.





[Addressee's Name]

[Date]

Page 2

The Files are not Contract Documents for the Project. Only hard copy documents are Contract Documents. If any discrepancies exist at any time between the Files and the Contract Documents the Contract Documents shall control. Contractor shall be responsible for updating the Files throughout the course of the Project or requesting updated electronic files (if they exist) by executing a new Electronic File Data Agreement for each requested file.

A complete list of the Files to be delivered to Contractor, including their dates and sizes, is attached. The Files are **[electronic source material for] [electronic versions of]** Contract Documents current as of **[Date files were recorded for transfer]**. Architect shall transmit the Files to Contractor in electronic form as AutoCAD version 2012, format files. These Files will be accompanied, upon request, by hard copy Contract Documents current as of the same date as the Files. The Contractor shall notify the Architect of any discrepancies between the hard copy Contract Documents and the Files within 30 days of receipt of the Files or the Files will be deemed to be accepted. Upon notification that there is a discrepancy between the hard copy Contract Documents and the Files, the Architect will replace the Files. Use of the electronic data is at the sole risk of the recipient, who acknowledges that the electronic data is subject to undetectable alteration or electronic corruption or degradation. Upon acceptance, the Contractor shall waive any right to claims for detrimental reliance upon the information contained in the File.

Contractor acknowledges it has no contractual relationship with Architect or any relationship that is the functional equivalent of privity of contract, other than this letter agreement. Contractor shall hold Architect harmless from and against any and all losses, damages, costs, claims and any other liability relating directly or indirectly to the subject matter of this agreement. In no event shall Architect's liability exceed the amount of service fee payment (if any) made under this agreement. This agreement shall be binding upon and inure to the benefit of the successors and assigns of the parties. Contractor shall not assign or otherwise transfer this agreement to any third party without the prior written consent of Architect.

Please sign below, indicating acceptance of these terms, and return one copy of the signed letter to me. Upon receipt of the signed letter, we will transmit the Files to you.

Very truly yours,

**Architect**

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

**[Name of Contractor's Representative]**  
Contractor's Representati

\_\_\_\_\_

\_\_\_\_\_





[Addressee's Name]

[Date]

Page 3

*Signature*

*Date*

cc: [CA Person for Project]





Project Name  
The College of New Jersey  
Project #

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**Electronic Data Order Form**

Date: \_\_\_\_\_

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_

Recipient Name: \_\_\_\_\_

Recipient Address: \_\_\_\_\_

Recipient Telephone: \_\_\_\_\_ Recipient Fax: \_\_\_\_\_

Person Requesting  
Electronic Data: \_\_\_\_\_

Signature: \_\_\_\_\_

I hereby request the following electronic data:

☐ **AutoCAD 2012 - Background Drawings**

☐ **Revit 2013 - BIM Model**



## **Electronic Data Order Form - Definitions**

### **Editable File Format:**

Editable file format electronic data can be altered by the Recipient. These electronic data will arrive in the format utilized by the Architect and indicated above.

### **Sheet Drawing:**

An electronic document representing a hard copy drawing, which may be used to produce a drawing sheet

### **Bound:**

All external references to an electronic document will be included into that electronic document, delivering it as a single electronic file.

### **Unbound:**

All external references to an electronic document will be included as separate electronic files.

### **Background Drawing:**

#### **A. Floor plans including the following elements:**

1. Exterior walls and openings in exterior walls at or below typical window or door height.
2. Interior walls and partitions and openings in interior walls and partitions at or below typical door height.
3. Glazed openings
4. Horizontal reference grid.
5. Toilet partitions and screens.
6. Cabinets, casework and countertops that are permanently installed.
7. Wall cabinets shown dotted.
8. Locations of elevators, dumbwaiters, escalators and chutes.
9. Stairs, landings, ramps, handrails and guards.
10. Plumbing fixtures visible within finished spaces.
11. Permanently mounted equipment in contact with the floor except Food Service Equipment.
12. Fixed seating.

#### **B. Separate Reflected Ceiling Plans including the following elements:**

1. Grid patterns for exposed grid ceilings
2. Tile patterns for acoustical tile ceilings
3. Ceiling bulkheads and soffits
4. Ceiling mounted Light fixtures
5. Fire suppression sprinkler heads
6. HVAC diffusers



## **SECTION 01 4000 - QUALITY REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 TRADESMEN AND WORKMANSHIP**

- A. Each Contractor shall ensure that tradesmen performing work at site are skilled and knowledgeable in methods and craftsmanship needed to produce required quality levels for workmanship in completed work. Remove and replace work which does not comply with workmanship standards as specified and as recognized in the construction industry for applications indicated. Remove and replace other work damaged or deteriorated by faulty workmanship or its replacement.
- B. In certain instances, specification text requires that specific work be assigned to specialists or expert entities, who shall be engaged for performance of those units of work. These shall be recognized as special requirements over which Contractor has no choice or option. These assignments shall not be confused with, and are not intended to interfere with, normal application of regulations, union jurisdictions and similar conventions. One purpose of such assignments is to establish which party or entity involved in a specific unit of work is recognized as "expert" for indicated construction processes or operations. Nevertheless, final responsibility for fulfillment of entire set of requirements remains with Contractor.

#### **1.2 INSPECTION, TESTS AND REPORTS**

- A. Required inspection and testing services are intended to assist in determination of probable compliances of the work with requirements, but do not relieve any Contractor of responsibility for those compliances, or for general fulfillment of requirements of Contract Documents. Specified inspections and tests are not intended to limit any Contractor's quality control program. Afford reasonable access to agencies performing tests and inspections.

- 1.3 The Owner is responsible for all testing and inspections (foundations, soils compaction, concrete, steel, etc.) unless specifically indicated otherwise in the Specifications. Each Contractor is responsible to coordinate the activities of the testing agency to assure that work is tested prior to being covered up or other activities associated to the work begin. Provide proper notice to the Owner's on site superintendent and/or project manager to assure the inspections are completed prior to any work requiring same is done.

#### **1.4 SPECIAL INSPECTIONS**

- A. Special Inspections: Owner will engage qualified testing agency(ies) and special inspectors to conduct special inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in New Jersey Uniform Construction Code and as follows:
  - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.



2. Notifying Architect, Commissioning Authority, Owner's Representative, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and Commissioning Authority, through Owner's Representative, with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents
6. Retesting and re-inspecting corrected work.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Final As-Built Survey of Underground Utilities: Submit two paper copies and one electronic (.pdf) file, signed by land surveyor.

#### PART 2 - PRODUCTS (not applicable)

#### PART 3 - EXECUTION

##### 3.1 REPLACEMENT OF WORK

- A. The Contractor shall, within 24 hours after rejection of Work, remove all materials and equipment so rejected and immediately replace said Work, at his/her cost, to the satisfaction of the Architect. Should the Work of the Owner or other Contractors be damaged by such removal or replacement, the Contractor shall reimburse the Owner or other Contractors for all cost incurred for correcting said damage.

##### 3.2 SITE LAYOUT

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Each contractor is required to complete their own surveying and layout work as required to complete their work.
- C. The contractor is required to complete a foundations survey to be issued to DCA as part of the project requirements. Contractor is to complete the foundation survey prior to backfilling the foundation. Coordinate the exact requirements with the DCA field inspectors and DCA offices.

##### 3.3 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate



and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions prior to work starting: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

- a. Description of the Work.
- b. List of detrimental conditions, including substrates.
- c. List of unacceptable installation tolerances.
- d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.4 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than 72 hours in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.

C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are



indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.5 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Owner promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify Architect and Owner when deviations from required lines and levels exceed allowable tolerances.
  - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Owner.

### 3.6 FIELD ENGINEERING

- A. Identification: Identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.



1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Owner before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework. **Coordinate the requirements of DCA for a complete foundations survey and submit same prior to backfilling.**
- E. Final Survey for Underground Utilities: Engage a land surveyor to prepare a final survey of all utilities installed during the project, including all elevations and inverts
- F. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
  2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."
  3. Submit final survey to the Owner in CADD format.
- 3.7 INSTALLATION
- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces without ceilings.
- B. Mechanical Installations: Comply with the following requirements:



1. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
  2. Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
  3. Install all equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location.
- C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- F. Tools and Equipment: Only use the best quality tools and equipment with proper attenuations for the latest acceptable sound levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements
- H. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

END OF SECTION 01 4000



## SECTION 01 4200 - REFERENCES

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved" or "Furnished as Submitted": When used to convey Architect's action on Contractor's submittals, applications, and requests, "Approved" or "Furnish as Submitted" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- J. "Experienced": When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- K. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.



## 1.2 INDUSTRY STANDARDS

- A. **Applicability of Standards:** Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. **Publication Dates:** Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. **Conflicting Requirements:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
  - 1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.
- D. **Copies of Standards:** Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.
- E. **Abbreviations and Acronyms for Standards and Regulations:** Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board <a href="http://www.access-board.gov">www.access-board.gov</a>	(800) 872-2253 (202) 272-5434
CFR	Code of Federal Regulations Available from Government Printing Office <a href="http://www.access.gpo.gov/nara/cfr">www.access.gpo.gov/nara/cfr</a>	(888) 293-6498 (202) 512-1530
FS	Federal Specification Available from Defense Automated Printing Service <a href="http://www.astimage.daps.dla.mil/online">www.astimage.daps.dla.mil/online</a>	(215) 697-6257
	Available from General Services Administration <a href="http://www.fss.gsa.gov/pub/fed-specs.cfm">www.fss.gsa.gov/pub/fed-specs.cfm</a>	(202) 619-8925



### 1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ICC International Code Council, Inc.

(888) 422-  
7233

[www.iccsafe.org](http://www.iccsafe.org) IBC International Building Code  
NJUCC New Jersey Uniform Construction Code

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200



## SECTION 01 4339 – MOCKUPS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes mockups for integrated systems and components which include products and materials, including the following:
  - 1. Integrated exterior mockups.
- B. Tests to be performed on mock-ups by Owner's Testing Agency are listed in this Section.
- C. Related Sections:
  - 1. Division 2 through 33 for additional mockups of individual products or components.

#### 1.2 DEFINITIONS

- A. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; to demonstrate compliance with specified installation tolerances; to assess conformance with historic fabric and character; and for layout or design verification. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
  - 1. Integrated Exterior Wall Assembly Mockups: Mockups of the exterior envelope erected separately from the building but on the project site, consisting of multiple products, assemblies and subassemblies.

#### 1.3 ACTION SUBMITTALS

- A. Shop Drawings: For each mockup, provide plans, sections, and elevations, indicating materials and size of mockup construction.
  - 1. Indicate manufacturer and model number of individual components.
  - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.
- B. Shop Drawings and Submittals for Materials: Provide those required for specific Division 02 through 33 specification Sections prior to starting mockup.
- C. Samples: Refer to specific Division 02 through 33 specification Sections.
- D. Mockup: Provide as many modifications to the mockup(s) as required to achieve Architect's and / or Owner's approval at no additional cost.



#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each product from the source supplying materials and products that are not part of the mock-up
- B. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work as follows:
  - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
  - 2. Notify Architect fourteen days in advance of dates and times when mockups will be constructed.
  - 3. Provide schedule of construction , determine when specific subcontractor(s) will be on site, allow for site meetings throughout the process for problem solving and coordination
  - 4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction of the Project.
  - 5. Demonstrate the proposed range of aesthetic effects and workmanship.
  - 6. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  - 7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work, unless removal is permitted in Article 3 of this Section
  - 8. Demolish and remove mockups when directed, unless otherwise indicated.
  - 9. No work on building elements included in any mockup shall commence without Architect's written approval of relevant mockup
- C. Pre-installation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to for constructing mockups.
  - 2. Review submittals and confirm understandings of markups, comments and actions associated with their review.
  - 3. Confirm schedule of mock-up construction with Owner, Architect, and related Contractors.
  - 4. Include all concerned parties, including subcontractors, manufacturer's representatives, and consultants, as required.

#### 1.5 PROJECT CONDITIONS

- A. Do not install products or materials that are wet, moisture damaged, or mold damaged.

#### 1.6 COORDINATION

- A. Coordinate construction of mockups to ensure timely approval and facilitate ordering of materials for incorporation in the Work.



## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Provide materials, components, and products for each integrated or room assembly mock-up as specified in individual Specification Sections.
- B. All materials shall be new and purchased specifically for the project.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Approval of mockups is for visual characteristics of material and construction, and other qualities specifically and approved by Architect in writing.
  - 1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
  - 2. Proceed with installation only after unsatisfactory conditions have been corrected and resolved.
- B. See Contract Documents for extent, construction, and location of mock-up(s).
- C. Provide ongoing access to mockups (room, or other) during its construction and throughout the Project by Owner's additional Contractors/Forces, to allow for F.F.& E. mockups and installations; and for other uses requested.
- D. Provide all necessary structural support, including foundations, framing, and backup substrates, as required, to secure and maintain mock-ups in a stable and permanent manner. (See mock-up structural design documents, where provided).

### 3.2 INTEGRATED EXTERIOR WALL ASSEMBLY MOCKUPS.

- A. Integrated Exterior Wall Assembly Mockups: Construct integrated exterior wall mockup in accordance with approved Shop Drawings and as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual specification sections, along with supporting materials.
- B. Build mockups for typical exterior wall of types of construction and in sizes as indicated on Drawings; include full thickness, including exterior face and backup wythes and accessories.
  - 1. Include a sealant-filled joint at least 16 inches (400 mm) long in each exterior wall mockup.
  - 2. Include through-wall flashing installed for a 24-inch (600-mm) length in corner of exterior wall mockup approximately 16 inches (400 mm) down from top of mockup, with a 12-inch (300-mm) length of flashing left exposed to view (omit masonry above half of flashing).
  - 3. Include metal studs, sheathing, sheathing joint-and-penetration treatment, air barrier, veneer anchors, flashing, cavity drainage material, and weep holes in exterior masonry-veneer wall mockup.



- 4. Include on one face of interior unit masonry wall mockup.
  - C. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface as directed.
  - D. Clean exposed faces of mockups with masonry cleaner specified in Division 04.
  - E. Timing of Exterior Wall Mock-Up: Construct exterior wall mock-up on site no later than 120 calendar days after the Commencement of the Work on site and a minimum of 60 calendar days prior to actual Work.
  - F. Location of Exterior Wall Mock-up: Construct mock-up on site at location approved by the Architect. Do not construct mock-up on the actual building.
  - G. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.
    - 1. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
    - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
  - H. Field Testing of Mock-Ups: Owner's testing agency will perform the following tests on installed mock-ups:
    - 1. Window/Curtain wall systems, ASTM E 1105, ASTM E 783, AAMA 501.2
    - 2. Clay masonry, ASTM C67, ASTM C1601, ASTM C 1715
    - 3.
  - I. Demolish and remove mockups when directed, unless otherwise indicated. Upon Architect's approval of removal of mockup, components from mockup may be utilized in final construction.
- 3.3 PROTECTION
- A. Protect mockups from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

END OF SECTION 01 4339



## SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF REQUIREMENTS

- A. Specific administrative and procedural minimum actions are specified in this section, as extensions of provisions in General Conditions and other Contract Documents. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized as an indication that such temporary activity is not required for successful completion of the work and compliance with requirements of Contract Documents.
- B. Each Contractor is specifically assigned certain responsibilities for temporary facilities to be used by all Contractors, other entities at the site, the Owner's work forces and other personnel including occupants of the project, Owner's Project Manager, the Architect, test agencies, personnel of governing authorities, and similar entities and personnel authorized to be at the project site during construction. In general, each Contractor is assigned the responsibilities for installation, operation and removal of each temporary facility which is related by recognized trades to its scope of contract work; and, except as otherwise indicated, each is responsible for costs and use charges associated therewith, including fuel, power usage, water usage and similar usage costs. The Contractor is responsible for temporary facilities not related to any other Contractor's scope of contract work and not otherwise specifically assigned, as designated by the Architect.
- C. No costs or usage charges for temporary facilities are chargeable to the Owner, nor can any Contractor's cost or usage charges for temporary facilities be accepted as the basis for a change order extra. The total costs and usage charges for temporary facilities are included, collectively, in the Contract Amounts.

#### 1.2 GENERAL REQUIREMENTS

- A. Each Contractor shall provide and operate all hoists, cranes, helicopters and furnish and erect all ladders and scaffolding as required for their work and by their subcontractors, constructed to afford proper protection to craftsmen, their Work and other Work in progress and previously executed.
- B. Informational Submittals:
  - 1. Site Plan: Submit site plan showing temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
  - 2. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
    - a. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
    - b. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged work.



- c. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- 3. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
  - a. Locations of dust-control partitions at each phase of work.
  - b. HVAC system isolation schematic drawing.
  - c. Location of proposed air-filtration system discharge.
  - d. Waste handling procedures.
  - e. Other dust-control measures.

### 1.3 JOB CONDITIONS

- A. Each Contractor shall establish and initiate use of each temporary facility at time first reasonably required for proper performance of the total work of project. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced the need.
- B. Each Contractor shall install, operate, maintain and protect temporary facilities in a manner and at locations that will be safe, nonhazardous, sanitary, protective of persons and property, and free of deleterious effects.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment
- D. Contractor is to provide road safety and traffic controls when working on or near any roadway or sidewalk on campus. Including flag personnel, signage, cones and all necessary safety measures to assure the safety of the pedestrians and vehicles at all times. This includes escorting deliveries using equipment other than a truck or car on roadways and walkways with a flag person. Backhoes can be run without an escort.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion



- F. Scaffolding: Erect and maintain scaffolding located at existing building surfaces in such a manner as to prevent damage to existing building materials.

#### 1.4 ENVIRONMENTAL PROTECTION

- A. Each Contractor shall provide facilities, establish procedures, and conduct construction activities in a manner that will ensure compliance with environmental and other regulations controlling construction activities at project site. The Contractor shall designate one person, the Construction Superintendent or other, to enforce strict discipline on activities related to generation of wastes, pollution of air/water/soil, generation of noise, and similar harmful or deleterious effects which might violate regulations or reasonably irritate persons at or in vicinity of project site. Anti-pollution measures required by D.E.P., as applicable are to be followed.

#### 1.5 FIELD OFFICES

- A. The Contractor shall establish a construction office on the site where directed by the Owner.
- B. Provide adequate office space for field office personnel of Contractor plus one spare work station for incidental use by Contractors' personnel; suitably finished, furnished, equipped and heated/air conditioned. Provide a Group 3 or greater facsimile machine with separate telephone lines for use of all Contractors, the Architect and the Owner on the site in the Construction Trailer as well as the Architect/Owner trailer. Include separate space for project meetings, with tables not less than 4' x 8', and seating for not less than 12 persons; cover main walls with tackboard material for posting of notices, progress schedule and similar information. Provide shelf space adequate for storage of approved samples.
- C. The Contractor shall provide a lockable office, minimum space 12' x 40' at the site for the Owner/Architect. For duration of the entire construction project, provide this office with:
1. Temporary electric service sufficient for all equipment in office. Service and monthly usage is to be paid by the Contractor.
  2. Adequate lighting, toilet facilities chemically treated, heating, ventilation and air conditioning throughout.
  3. Weekly janitorial services.
  4. Telephone:
    - a. Provide two (2) telephone lines; one designated for fax machine. Service and monthly usage is to be paid by the Contractor.
    - b. Provide two (2) telephones. Each telephone to have the capacity of answering either line, placing calls on hold, transferring calls and conference calling. These instruments are to be located as directed by the Owner's Project Manager (phones, fax, computer).
    - c. Provide one (1) automatic telephone answering/recording device to be located in this office.
    - d. Provide an external sound-emitting device to have a different sound from other devices that may be installed outside Contractor's office.



- e. These telephones shall have listed telephone numbers and monthly bills are paid by the Contractor.
- f. Provide cable service for high speed internet access. Cost of service is to be paid by the Contractor.
- 5. Furniture and equipment as follows:
  - a. Three desks, three swivel chairs and two side chairs.
  - b. Two plan racks, two plan tables and one sample shelf.
  - c. Two 5-drawer file cabinets.
  - d. One draftsman's stool and one drafting table with a 36" x 60" top and straight edge.
  - e. Two meeting tables 8' x 4' minimum and twelve (12) folding chairs.
  - f. One copying machine, Xerox or equal complete with paper supplies and two-year maintenance contract. (Capable of producing 50 copies per minute and have sort, sort/staple function.)
  - g. One first-aid cabinet complete with supplies. Model 0412036 as manufactured by Mine Safety Appliances Company or equal.
  - h. One calculator, electric semi-automatic.
  - i. One water cooler with water service.
  - j. One plain paper fax machine with memory dial.
  - k. Provide copy/fax paper on request.
- 6. Trailer to be laid out with office at each end and conference room in the center.

D. Other Contractors shall each provide suitable field offices for their own personnel and for incidental use by their Contractors.

- 1. General Note: All temporary office trailers shall be strapped down to the ground.

E. The Contractor shall provide temporary electrical service to the Contractor's and Architect/Owner field offices. Connection of other contractors' field offices shall be each contractor's responsibility, coordinated with the Contractor.

## 1.6 SHEDS

A. Each Contractor shall provide his own temporary sheds or trailers for storage, fabrication and similar purposes, which shall be located in accordance with the Contractor's coordinated plan for site utilization, as directed by the Architect and Owner.

## 1.7 WATER CONTROL

A. Surface water drainage provisions shall be provided by the Contractor. The Contractor is to comply with Erosion and Sedimentation Control Plan on the Drawings and adjust as directed by the Owner to eliminate any interference with other trades work and access to areas of the site.

B. The Contractor will be responsible to control all water during excavations and to maintain the bottom of footings, trenches and mass excavations in a stable condition. Replace all "soft spots" with suitable clean compactable fill as part of the base contract.

## 1.8 SECURITY



- A. The Contractor shall maintain complete security on the site at all times outside of normal working hours to protect the Work and all field offices, and to secure the area of construction by restricting all trespassers.

- 1. This means locking the gates. A guard is not required.

#### 1.9 SITE ENCLOSURE FENCE

- A. The Contractor shall enclose the entire project site to be sufficient to contain entire construction activity. Provide 8' high chain link steel fence with screening with custom TCNJ logo/lettering. Provide 8' high gates for both personnel and trucks, with locks held under strict security control. A minimum of four gates will be required (locations will be coordinated in the field with the Owner). Fence to include top rail and be maintained throughout the project in a straight and plumb condition.

#### 1.10 TEMPORARY CONSTRUCTION FACILITIES

- A. Contractor to provide temporary stairs (centrally located, meeting the latest OSHA requirements) at each story of construction as soon as construction of floor system at head of stairs is started, and retain in use until permanent stairs are placed in use. Also, provide temporary plywood walkways, scaffold and railings as needed for public areas to protect against overhead work. Also refer to Paragraph 1.10 of this section.
- B. Contractor to provide, maintain, operate and remove when no longer needed, a temporary elevator for vertical movement of personnel and materials if required. Provide full time operator if required. Also refer to Paragraph 1.10 of this section
- C. Where mud, snow, ice or other hazardous conditions exist in the purview (Scope of Work), the Contractor shall remove the hazards immediately and replace with suitable material for the other contractors use. If the Owner is compelled to remove the hazards with their own forces due to inaction by the Contractor, then that Contractor will be back-charged for the work performed by the Owner.
- D. No welding, cutting by torch, or Work utilizing or causing flammable waste shall be done unless adequate fire protection is provided and maintained for the duration of the Work in the area of operations.
- E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction

#### 1.11 DEBRIS CONTROL (Refer to Section 01 7419 for further delineation)

- A. Each Contractor shall be responsible for daily cleaning up of spillages and debris resulting from his operations and from those of his Subcontractors; and shall be responsible for complete removal and disposition of hazardous and toxic waste materials. The Contractor shall provide containers at grade, sufficient for the depositing of nonhazardous/nontoxic waste materials, and shall remove such waste materials from project site at least weekly during cold weather (daily high temperatures below 50°F) and at least twice weekly during mild and warm weather.
  - 1. Contractor is responsible to provide all dumpsters.
  - 2. Once per week, The Contractor is to provide three laborers to clean the site/building. The GC will provide tools (i.e., brooms, etc.) to accomplish this task. This is in



addition to the proper daily cleanup by all trades of the debris they deposit throughout the course of their normal workday.

3. The Architect and Owner shall coordinate the dumpster location with the Contractor. The Contractor shall be responsible for obtaining, maintaining, and disposing of dumpsters, and shall maintain clean work areas throughout the course of the project.

B. The Contractor shall daily clean all mud, dirt and debris resulting from all trades operations from the adjacent streets, sidewalks, drives and parking areas and shall repair all damage caused by the cleaning to the satisfaction of the Owner.

C. The Contractor is to provide and maintain appropriate means of trash disposal (i.e., chutes) to grade/dumpster. Multiple units may be required and shall be figured for in the GC bid.

D. Should cleanup not be completed to the satisfaction of the Owner, the Owner will hire additional labor to clean the site and back charge the Contractor via a deduct change order.

#### 1.12 TEMPORARY PARKING

A. Limited staging and on site parking will be allowed on site. The Contractor will coordinate with the owner all parking areas with all the subcontractors. Parking for contractor employees is available across Route 31, on Carlton Avenue in the Owner's Contractor parking lot. Contractor to shuttle employees accordingly.

1. Contractors shall figure the site will only have enough parking for 6 vehicles (or less). All others shall park at the TCNJ Carlton Avenue parking lot, and be shuttled as necessary to the site by the Contractor or other contractor means.

### PART 2 - PRODUCTS

#### 2.1 TEMPORARY CONSTRUCTION

A. Construction Sign: Four (4) 8'-0" x 20'-0" vinyl banners shall be provided by the Contractor with the content as shown in the drawings attached to this section. Letters shall be of sizes and colors indicated. Letters shall be adhered to the face of the sign in strict accordance with manufacturer's printed instructions. Sign shall be installed on the site (hung on a fence) in location as directed by the Architect, plumb and level in all directions. Text shown is for general scope only. The Owner reserves the right to change the text prior to installation of sign. The signs shall remain in place for the duration of the project as per Architect/Owner direction.

B. Contractor shall provide wind bracing per FM Research approved criteria.

C. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise. Provide types of partitions approved by Owner in Owner occupied areas

1. Temporary partitions within the new building as required for construction shall be constructed of 2x4 studs 16" o.c. with 5/8" drywall floor to bottom side of floor above.



Drywall shall be attached to occupied face of studs and nailed/screwed 8" o.c. maximum spacing. Joints shall occur over studs and shall be taped and finish spackled along with screws. Partitions are to be painted with two coats of paint for interior or exterior type partitions.

2. In areas where containment of airborne particles is critical to Owner operations, construct dustproof partitions with two layers of 6-mil (0.14-mm) polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
  - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
4. Insulate partitions to control noise transmission to occupied areas.
5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
6. Protect air-handling equipment.
7. Provide dust control adhesive-surface walk-off mats at each entrance through temporary partition.

D. Contractor to use  $\frac{3}{4}$ " plywood for exterior faced temporary partitions.

## PART 3 - EXECUTION

### 3.1 ENCLOSURES

- A. At all times, the Contractor shall secure building against unauthorized entrance at times when personnel are not working. Provide secure temporary enclosure at ground floor and other locations of possible entry, with locked entrances.
- B. At each story of construction, as soon as the structural floor work is principally completed and the enclosure wall work is principally completed, the Contractor shall provide temporary enclosure of remaining openings. Arrange enclosure work to accommodate access, temporary heating, and natural ventilation as required for construction work by all entities on the project.
- C. Where any form of demolition will expose the interior of the building to weather, demolition shall follow the erection of weatherproof walls by the Contractor installed inside the demolition line, sealed and flashed, as required, to keep all water from the building interior. Keep temporary weatherproofing in place until new construction has been completed to the stage where water will not enter the building.
- D. The Contractor shall provide constant protection against rain, wind, storms, frost or heat to maintain the work, materials, apparatus and fixtures free from damage. At the end of each day's work, cover work likely to be damaged. During cold weather, protect work from damage by freezing and provide such enclosures and heating apparatus as may be necessary diligently to prosecute the Work without stoppage for reason of unfavorable weather.



- E. Wherever a Contractor provides openings through walls or slabs, each location shall be adequately protected at the end of each working day with temporary enclosures to make these areas tight. Openings through exterior walls shall be watertight.

### 3.2 TEMPORARY ELECTRICITY

- A. As soon as practical after start of work at project site, the Contractor or Subcontractor(s) shall provide temporary electrical power distribution system, sufficient to accommodate temporary lighting and construction operations including the use of power tools, including heavy duty electrical welding units, electrical heating units, and start-up of specified building equipment which must be tested, started or placed into use prior to completion of its permanent power connections. Provide weatherproof, grounded wiring with overload protection; with direct wired connections, where feasible, and for voltages over 220/208 volts. Locate multiple outlets, not less than 4 gang, at each story of construction, spaced so that entire area of construction can be reached by power tools on a single extension cord of 100' maximum length.
1. **The owner** shall pay for cost of all electric energy used on distribution lines installed for the duration of the project, either by means of temporary power or permanent power since this is a renovation project.
  2. Contractor shall provide and pay for all maintenance, servicing, operation and supervision of lines installed for the project. He shall also maintain and service electrical equipment installed by the Contractor and necessary for maintenance of temporary heat after same is required in the building.
  3. Provide service with ground fault circuit interrupter feature, activated from each circuit of 20 amp or less rating.
  4. Supply power for electric welding, if any, from either temporary power distribution system or by engine driven power generator sets, at Contractor's option.
  5. Where a service of a type other than herein mentioned is required, the Contractor requiring same shall install and pay all costs for such special service.
  6. As permanent power distribution system is accepted as substantially complete, either entire system or usable portions thereof, make suitable provisions for temporary use thereof, and remove unused portions of temporary system. Maintain and operate permanent electrical supply and distribution system until time of final acceptance and transfer of operation to Owner's personnel.
  7. Provide meters, if required, for electrical power.
  8. When temporary electrical lines are no longer required, they shall be removed by the Contractor and any part, or parts, of the grounds or buildings disturbed or damaged shall be brought back to their original condition.
  9. Contractor shall pay for all power up to Notice of Substantial Completion. At that time, the Owner will commence payment for all electric power usage. This is not a requirement for this project. The owner will pay for elec. usage during construction.
  10. Contractor shall make power and lighting available to all Contractors on a 24-hour basis at his own expense. Temporary power and lighting is to be maintained at all times unless directed otherwise by the Owner.
  11. Contractor shall satisfy requirements of Electricians Union for maintaining temporary power such as stand-bys etc., and pay for all associated costs.
- B. Contractor shall provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug in task lighting.



1. Provide as a minimum uniformly spaced general lighting equivalent to not less than one 200 watt incandescent lamp per 1,000 sq. ft. of floor area, and one 100 watt lamp per 50' of corridor or per flight of stairs.
2. Limit lighting installations to intensities which will accommodate normal access and workmanship requirements, recognizing that each entity performing work requiring higher intensity lighting will provide supplementary plug in temporary lighting at localized areas where such work is in progress.
3. As permanent lighting system is substantially complete, for each story or usable portion thereof, make suitable provisions for temporary use thereof, and remove unused portions of temporary lighting system. Maintain and operate permanent lighting system until time of final acceptance and transfer of operation to Owner's personnel.
4. Replace all bulbs in permanent light fixtures that have been utilized for temporary lighting.
5. Maintain temporary lighting on a daily basis and change or adjust as new wall configurations go up.

### 3.3 TEMPORARY HEATING AND COOLING

- A. Prior to enclosure of building, buildings, or portions thereof, and when weather conditions indicate the necessity for temporary heat, the Contractor shall provide, maintain, operate and pay all costs, including fuel, for a sufficient number of approved portable heaters that will maintain a minimum temperature of 45 degrees Fahrenheit in all working areas of the building, unless higher temperatures are specified in individual specification sections, so that the progress of the work is not impeded. Contractor shall provide plastic tent protection, temporary window and door opening closures, and any other protection required so that any work can continue in cold and inclement weather. The Contractor shall include the cost of temporary heat in their contract price and shall calculate the need for heat based on historical precedent and the stage of completion of the work. Normal heating months span from November 15 to April 15. The Contractor shall have temporary heat available throughout the building for daily 24 hour use.
  1. Temporary enclosures shall begin one month prior to the start of temporary heat. Should the Contractor not begin the enclosure process at that time, the Owner will hire labor to have this work completed, and back charge the Contractor for all costs associated with this work.
- B. As soon as temporary, or permanent, enclosure is completed for any area or story of construction, and temporary heat is required for scheduled work, or required to facilitate proper workmanship, and permanent heating system is not yet operable or authorized for use, the Contractor shall provide temporary heat service for every entity authorized to do work at project site. Maintain temperatures as indicated by other Specification Sections for each type of work to be performed.
- C. The Contractor shall enclose the building from November 15 through the following April 15 with temporary or permanent enclosures (doors, windows, etc.) to maintain a working temperature and to secure the building from trespassers. This will coincide with the scheduled time for temporary heat.
- D. The building shall be considered enclosed when the roof is on and substantially weathertight; the exterior walls have been completed to the point that they are



weathertight (but not necessarily with final exterior finish such as brick); and when openings, doors and windows are closed with either temporary or permanent closures. Final decision of when the building is considered enclosed shall be solely the decision of the Owner.

- E. As permanent heating/cooling system is substantially complete, for each story or usable portion thereof, the Contractor shall make suitable provisions for use thereof in temporary heating and cooling, and notify the Contractor to remove unused portions of temporary heating service. The Contractor shall maintain and operate permanent system for temporary heating/cooling purposes, including service to occupied areas if any, until time of final acceptance and transfer of operation to Owner's personnel, for major parts of system if not for entire heating system.
- F. After the permanent heating system is generally ready for use and the conditions of construction requires continuous 24 hour heat in the building, the Contractor shall provide, operate and maintain temporary radiation or unit heaters to provide required temperatures for the conduct of the work. This service shall be continued until the permanent heating system has been completely installed and in operation and the buildings of the project completed. The Contractor is to provide a one year warrantee from date of substantial completion, not the date of temporary heat. The Contractor shall furnish and pay for all fuel as required for providing temporary heat via the permanent heating system.
- G. All permanent heating equipment used to supply temporary heat shall be completely cleaned and reconditioned by the Contractor prior to final acceptance. Radiator traps and valves used in the heating system during the period of its operation to supply temporary heat shall not be reinstalled in the permanent system. Install new disposable filters and clean non-disposable filters prior to final acceptance.
- H. The Contractor shall remove all soot, smudges, and other deposits from walls, ceilings, and all exposed surfaces which are the result of the use of any temporary heating equipment including the use of the permanent heating system for temporary heat purposes. There shall not be any finish work until all such surfaces are properly cleaned.
- I. The project will have two full seasons that will require full building temporary heat (either via temporary units or permanent equipment) and Contractor shall bear all costs associated with providing this temporary heat.

#### 3.4 TEMPORARY VENTILATION

- A. A trade requiring ventilation for Work shall provide fans to induce circulation of air provided prior approval has been obtained from the Owner and Architect.
- B. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes

#### 3.5 TEMPORARY TELEPHONES

- A. The Contractor shall provide and pay for telephone instruments and all their monthly bills plus the Architect/Owner field office.



- B. Each Contractor is responsible for their own telephone service and for payment of all charges relating to that service.

### 3.6 TEMPORARY WATER

- A. As soon as practical after start of work at project site, the Contractor shall provide temporary water distribution piping system, with meter and back flow preventer, from one of the potable water hydrants (in location as approved by the Owner), complete with 3/4" hose bib terminations and fire hose sized termination, at each story of construction work, located so that any area of building construction can be reached with a 100' length of hose. Provide hose units and protect system from freezing. Maintain system in operation at all locations until either the need for water has ended or the permanent system is placed in use for temporary water service. Maintain minimum water pressure of 30 psig at each hose bib, with 5 gpm flow rate.
- B. Where potable water is available, either for total temporary requirements or as a separate service for drinking water and sanitation, extend piping system through construction areas and to temporary offices and hand wash facilities, and provide one refrigerated drinking fountain at each temporary office and at least one fountain at every third story of construction.
- C. As permanent water distribution system is accepted as substantially completed, either entire system or usable portions thereof, make suitable provisions for temporary use thereof and remove unused portions of temporary system. Maintain and operate permanent water distribution system until time of final acceptance and transfer of operation to Owner's personnel.
- D. If the source of water supply is a well, provisions covering the supply of water shall include the installation of necessary power driven pumping facilities, as well as protection of well from contamination. The water supply shall be tested periodically by the Contractor and, if necessary, shall be chlorinated and filtered.
- E. Contractor shall pay all monthly use charges for water.
  - 1. Provide meters for water services, if required. Read meters and record readings weekly, and include in progress report to Architect at monthly intervals.

### 3.7 TEMPORARY SANITARY FACILITIES

- A. Starting at time of start of work at project site, the Contractor shall provide and maintain self-contained toilet units of type acceptable to governing authorities, adequate, at all stages of construction, for use of personnel at project site. Provide separate facilities for male and female personnel when both sexes are working, in any capacity, at project site. Provide self-contained hand wash facilities. Facilities shall remain in use until completion of project. Use of permanent facilities will not be permitted.

### 3.8 REMOVAL AND RESTORATION

- A. Prior to acceptance of the Project, each Contractor shall remove temporary work for which he has been responsible.

### 3.9 OWNER'S RIGHTS



- A. If any Contractor fails to carry out his responsibilities in providing temporary facilities, as set forth above, the Owner shall have the right to take such action as they deem proper for the protection and conduct of the Work, and to deduct the cost thereof from the amount due the Contractor at fault.
- B. Extended work days, hours, shifts, weekend work, etc. may be allowed upon coordination and approval by Owner, and Architect at no additional cost to the Owner.
  - 1. Should the schedule begin to slip, for any reason, each Contractor will be required to work additional shifts or weekends to recover the lost time.

### 3.10 TEMPORARY STAIRS and ELEVATOR

- A. The Contractor will supply wooden stairs per floor suitable for other trades to access the work on upper levels including the mechanical mezzanines. The stairs shall meet the code in effect at the time of construction with handrails and guardrails of the appropriate structural capacity and dimensions. The Contractor shall submit to the local code official (if required) two sets design drawings of the stairs that have been prepared, signed and sealed by an Architect licensed in the State of the place of work. The Contractor shall maintain these stairs until such time that the permanent stairs are available for use. At that time, the Contractor shall remove the temporary stairs.
- B. The Contractor is to provide, maintain, operate, and remove when no longer needed, a temporary elevator for the vertical movement of personnel and equipment/materials and pay for all costs associated with said elevator and its operation should OSHA regulations require the use of one.

### 3.11 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
  - 1. Protect porous materials from water damage.
  - 2. Protect stored and installed material from flowing or standing water.
  - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
  - 4. Remove standing water from decks.
  - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
  - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  - 2. Keep interior spaces reasonably clean and protected from water damage.
  - 3. Periodically collect and remove waste containing cellulose or other organic matter.
  - 4. Discard or replace water-damaged material.
  - 5. Do not install material that is wet.
  - 6. Discard, replace, or clean stored or installed material that begins to grow mold.



7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
  - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
  - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
  - c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours

END OF SECTION 01 5000

Attachment: Project Sign Layout



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## SECTION 01 6000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

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- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; and equivalent products.
  - B. Related Requirements:
    - 1. Section 012500 "Substitution Procedures" for requests for substitutions.
    - 2. Section 014200 "References" for applicable industry standards for products specified.
- 

#### 1.2 DEFINITIONS

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- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
    - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
    - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
    - 3. Equivalent Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
  - B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating equivalent products of additional manufacturers named in the specification.
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#### 1.3 ACTION SUBMITTALS

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- A. Equivalent Product Requests: Submit request for consideration of each equivalent product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
    - 1. Include data to indicate compliance with the requirements specified in "Equivalent Products" Article.
    - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a equivalent product request. Architect will notify Contractor of approval or rejection of proposed equivalent product request within 10 working days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
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- a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
  - b. Use product specified if Architect does not issue a decision on use of a equivalent product request within time allocated.
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- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.
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#### 1.4 QUALITY ASSURANCE

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- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
    - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
    - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
  - B. Mechanical Materials and Equipment: When two or more items of same material or equipment are required (pumps, valves, air conditioning units, etc.), they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, pipe, tube, fittings (except flanged and grooved types), sheet metal, wire, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in the work, except as otherwise indicated. Provide products which are compatible within systems and other connected items.
  - C. Asbestos in Materials: All products submitted for use and incorporated into this project shall be asbestos free.
  - D. Mercury-Free Products: All products submitted for use and incorporated into this Project shall be mercury-free. In the absence of mercury-free products, provide products with the lowest amount of mercury possible.
  - E. Lead-Free Products: All products submitted for use and incorporated into this Project shall be lead-free.
  - F. To the greatest extent possible, provide products, materials and equipment of a singular generic kind and from a single source.
  - G. Performance Criteria: Provide products which comply with specific performances indicated, and which are recommended by manufacturer, in published product literature or by individual certification, for application indicated. Overall performance of a product is implied where product is specified for specific performance.
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#### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

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- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:



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1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- 

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  6. Protect stored products from damage and liquids from freezing.
  7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
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## PART 2 - PRODUCTS

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### 2.1 PRODUCT SELECTION PROCEDURES

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- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect will make selection.
  5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved equivalent," comply with requirements in "Equivalent Products" Article to obtain approval for use of an unnamed product.
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7. A named product and model number establishes the characteristics and salient features of the specifications even when they are not fully described and will serve as the basis of comparison.

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B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Equivalent products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Equivalent products or substitutions for Contractor's convenience will not be considered.
3. Products:
  - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Equivalent products or substitutions for Contractor's convenience will not be considered.
  - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Equivalent Products" Article for consideration of an unnamed product.
4. Manufacturers:
  - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Equivalent products or substitutions for Contractor's convenience will not be considered.
  - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Equivalent Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a equivalent product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Equivalent Products" Article for consideration of an unnamed product by one of the other named manufacturers.

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C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

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D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or



texture from manufacturer's product line that includes both standard and premium items.

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## 2.2 EQUIVALENT PRODUCTS

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- A. Conditions for Consideration: Architect will consider Contractor's request for equivalent product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Evidence that the proposed product provides sustainable design characteristics that specified product provided for achieving LEED prerequisites and credits.
  3. Evidence that the proposed product will not adversely affect Contractor's construction schedule.
  4. Evidence that the proposed product has received necessary approvals of authorities having jurisdiction.
  5. Evidence that the proposed product will have no adverse effect on other trades and will not affect or delay progress schedule; or if proposed product involves more than one contractor, proposed product has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
  6. Evidence that the proposed product maintenance service and source of replacement parts, as applicable, is available similar to the specified product.
  7. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  8. Evidence that proposed product provides specified warranty.
  9. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  10. Samples, if requested.

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## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000



## **SECTION 01 7329 – CUTTING AND PATCHING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes procedural requirements for cutting and patching.
- B. Related Requirements:
  - 1. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

#### **1.2 DEFINITIONS**

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### **1.3 SUBMITTALS**

- A. Cutting and Patching Proposal: Submit proposal describing procedures at least 10 days prior to the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
  - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

#### **1.4 QUALITY ASSURANCE**

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.



- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
    - 1. Primary operational systems and equipment.
    - 2. Air or smoke barriers.
    - 3. Fire-protection systems.
    - 4. Control systems.
    - 5. Conveying systems.
    - 6. Electrical wiring systems.
  - C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
    - 1. Water, moisture, or vapor barriers.
    - 2. Membranes and flashings.
    - 3. Equipment supports.
    - 4. Piping, ductwork, vessels, and equipment.
    - 5. Noise- and vibration-control elements and systems.
  - D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
    - 1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.
      - a. Processed concrete finishes.
      - b. Ornamental metal.
      - c. Roofing.
      - d. Firestopping.
      - e. Window wall system.
  - E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- 1.5 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.



- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.



2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections of these Specifications where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

END OF SECTION 01 7329



## **SECTION 01 7419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Salvaging nonhazardous demolition and construction waste.
  - 2. Recycling nonhazardous demolition and construction waste.
  - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Sections include the following:
  - 1. Division 02 Section "Selective Demolition" for disposition of waste resulting from selective demolition of existing buildings,
  - 2. Division 04 Section "Unit Masonry" for disposal requirements for masonry waste.

#### **1.2 DEFINITIONS**

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

#### **1.3 PERFORMANCE REQUIREMENTS**

- A. General: Achieve end-of-Project rates for salvage/recycling of at least 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Waste Management Plan: Submit 4 copies of plan within 15 days of date established for the Notice to Proceed.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-8 for demolition waste. Include the following information:
  - 1. Material category.



2. Generation point of waste.
  3. Total quantity of waste in tons
  4. Quantity of waste salvaged, both estimated and actual in tons
  5. Quantity of waste recycled, both estimated and actual in tons
  6. Total quantity of waste recovered (salvaged plus recycled) in tons
  7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- H. LEED Submittal: LEED letter template for Credit MR 2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- I. Qualification Data: For refrigerant recovery technician.
- J. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- 1.5 QUALITY ASSURANCE
- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01. Review methods and procedures related to waste management including, but not limited to, the following:
1. Review and discuss waste management plan.
  2. Review requirements for documenting quantities of each type of waste and its disposition.
  3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.



4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

#### 1.6 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, and waste reduction work plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
  1. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
  2. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
  3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
  4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
  5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by the Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
  1. Comply with Division 01 Section "Temporary Facilities" for operation, termination, and removal requirements.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
  1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.



- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
  - 2. Comply with Division 01 Section "Temporary Facilities" for controlling dust and dirt, environmental protection, and noise control.

### 3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Sale and Donation: Not permitted on Project site.

### 3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
  - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 3. Stockpile materials away from construction area.
  - 4. Store components off the ground and protect from the weather.
  - 5. Remove recyclable waste off Owner's property and transport to recycling receiving or processor.

### 3.4 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: break up and sort rebar as best as possible. Recycle all concrete
- C. Recycle all unused metal products during construction of a new building and from the building before demolition remove all aluminum, copper and steel etc.
- D. Recycle as much unused and demolished products as possible and provide a complete report to Owner to confirm the percentage of waste being recycled on the project. Submit said report monthly.

### 3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:



1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
  2. Polystyrene Packaging: Separate and bag materials.
  3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
  4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.

### 3.6 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials on site.
- C. Burying: Do not bury waste materials on site.
- D. Disposal: Transport waste materials off Owner's property and legally dispose of them.
- E. Washing waste materials into sewers or drains is not permitted.

END OF SECTION 01 7419



## SECTION 01 7700 – CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 DEFINITION

- A. Closeout is hereby defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of Contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Divisions 2 through 33. Time of closeout is directly related to Substantial Completion. Phases may be completed and occupied before the entire project is deemed substantially complete.
  - 1. NOTE: This project will have only one Substantial Completion date upon all phases being completed.
- B. Completion in any particular Phase shall be defined that every material item has been installed for the Work Area defined by that Phase. Nothing is missing and therefore, the punch list can begin.

#### 1.2 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. At least ten (10) days prior to requesting the Architect's inspection for certification of substantial completion, for either entire work or portions thereof, complete the following and list known exceptions in request:
  - 1. In progress payment request coincident with or first following date claimed, show either 100% completion for portion of work claimed as substantially complete, or list incomplete items, value of incomplete items, and reasons for being incomplete.
  - 2. Include supporting documentation for completion as indicated in these Contract Documents.
    - a. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 3. Submit statement showing accounting of changes to the Contract Sum.
  - 4. Advise Owner of pending insurance change over requirements.
  - 5. For all fire sprinklers, devices, alarm system, roofing system, doors, insulation, etc. requiring FM Research approval, submit certification from Factory Mutual indicating compliance with requirements.
  - 6. Submit test/adjust/balance records.
  - 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  - 8. Certificates of Release: Obtain and submit releases from authorities having jurisdiction enabling Owner's full and unrestricted use of the work and access to services and utilities, including occupancy permits, operating certificates, and similar releases.
  - 9. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 10. Perform preventive maintenance on equipment used prior to Substantial Completion.
  - 11. Complete start up and testing of systems and equipment. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and



systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."

12. Advise Owner of changeover in heat and other utilities.
13. Participate with Owner in conducting inspection and walkthrough with local emergency responders
14. Discontinue, or change over, and remove from project site temporary facilities and services, along with construction tools and facilities, mockups, and similar elements.
15. Complete final clean up requirements.
16. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection, or the Owner will notify Contractor of items, either on Contractor's list or additional items identified by Architect that must be completed or corrected before certificate will be issued.

- a. Architect will perform inspection in areas no smaller than a floor plate. Inspection of individual rooms or spaces will not be performed.
- b. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
- c. Results of completed inspection will form the basis of requirements for Final Completion.

C. Substantial Completion shall be defined for this project that every element of the project/construction and the contract, based on the contract and amended drawings and specification sections, is completed and the project is deemed complete, less repairs and/or touch up type work that would be generally referred to as punchlist work. If any components of the project, or site work associated with this contract are not installed, the project cannot be deemed substantially completed.

### 1.3 PREREQUISITES TO FINAL ACCEPTANCE

A. Prior to requesting Owner and Architect's final inspection for certification of final acceptance and final payment, complete the following and list known exceptions, in request:

1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted.
2. Submit release of liens for all subcontractors.
3. Submit Contractor's statement that his final application, as presented, is the final bill and no other claims will be presented.
4. Submit updated final statement, accounting for additional changes to Contract Sum including change orders and allowances.
5. Submit certified copy of Architect's final punch list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect.
6. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion



- construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
7. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents
  8. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner, in location directed by Architect, obtaining a signed receipt of materials delivered. Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted. Label with manufacturer's name and model number where applicable.
    - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section.
  9. Submit one set of record documents, bound copies of maintenance/operating manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
  10. Complete final clean up requirements.
  11. Touch up and otherwise repair and restore marred exposed finishes.
  12. Submit notarized consent of surety to final payment.
  13. Submit final liquidated damages settlement statement, if required, acceptable to Owner.
  14. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
  15. A letter from the Owner's representative certifying that he has been properly instructed in the operation and maintenance of equipment by the Contractor.
  16. Maintenance Bond.
  17. Underwriter's Certificate or Electrical Sub Code Official's Approval.
  18. Fire Alarm Certification.
  19. HVAC Contractor to submit certified balancing report.
  20. Final acceptance by Architect of record documents
- B. Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. Upon receipt of Contractor's notice that work has been completed, including all punch list items, but excepting incomplete items delayed because of circumstances acceptable to the Owner and Architect, the Owner and Architect will reinspect the work. Upon completion of reinspection, the Architect will either prepare the certificate of final acceptance or advise the Contractor of work not completed or obligations not fulfilled as required for final acceptance.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected
- C. In the event that the work is not completed or obligations are not fulfilled as required for final acceptance and the Architect/Owner is required to reinspect the work more often than the two inspections the Contractor shall compensate the Architect and/or the Owner at the rate of \$1500.00 for each additional site visit required for reinspections. The compensation shall be processed by change order as a deduction to the Contractor's Contract Sum, which amount will be paid to the Architect by the Owner, through a Supplemental order as an addition to the Architect's Fee.



#### 1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.
  - 4. Submit list of incomplete items in the following format:
    - a. MS Excel electronic file. Architect will return annotated file.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces. Use cleaning products that comply with the maximum allowable VOC levels.

#### PART 3 - EXECUTION

##### 3.1 CLEANING

- A. Where extra materials of value remaining after completion of associated work have become Owner's property, dispose of these to Owner's best advantage as directed.
- B. After Substantial Completion of the Work, each Contractor shall do the final cleaning of the surfaces of his installations as may be required by the various Specification sections.
- C. After each Contractor has cleaned their work, The General Contractor shall engage a professional cleaning service to perform final cleaning of the work consisting of cleaning each surface or unit to normal clean condition. Comply with manufacturer's instructions for cleaning operations and chemicals. The following are examples, but not by way of limitation, of cleaning levels required:
  - 1. Remove labels that are not required as permanent labels.
  - 2. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances that are noticeable as vision obscuring materials. Replace broken glass and damaged transparent materials.



3. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment; remove excess lubrication and other substances.
4. Remove debris and surface dust from limited access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
5. Vacuum and clean carpeted surfaces and similar soft surfaces.
6. Clean light fixtures and lamps to function with full efficiency.
7. Clean and wax or polish all hard floors following manufacturer's instructions.
8. Clean all window surfaces inside and outside.
9. Perform final cleaning in, on and around all casework, sinks, toilets fixtures, etc.
10. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
11. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
12. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
13. Remove tools, construction equipment, machinery, and surplus material from Project site.
14. Remove snow and ice to provide safe access to building.
15. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
16. Sweep concrete floors broom clean and wet mop.
17. Replace parts subject to unusual operating conditions.
18. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
19. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
20. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
  - a. Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
21. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
22. Leave Project clean and ready for occupancy.

- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

### 3.2 REMOVE TEMPORARY FACILITIES

- A. At the completion of the work prior to final payment, remove all temporary facilities entirely from site, including, but not limited to, the following: Field offices, trailers, shanties, sheds, job telephone, temporary toilets, temporary enclosures, dust barriers and other temporary protection devices.



### 3.3 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 7700



## SECTION 01 7810 – PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Project record documents consisting of:
  - a. Record drawings.
  - b. Record project manual (specifications).
  - c. Record product data.
  - d. Miscellaneous record submissions.

##### B. Refer to other sections of these specifications for further requirements.

#### 1.2 SUBMITTALS

##### A. Project Record Documents: Submit after substantial completion, but prior to final completion.

1. Record drawings: Submit in form of opaque prints and pdf electronic forms.
  - a. Sets shall include all drawings, whether changed or not.
2. Other record documents: Submit originals or good quality photocopies.
3. Each prime/sub contractor is responsible for their respective trade, record documents and record drawings. Combine with General Contractor record drawing documents for a complete set.

##### B. Closeout Submittals:

1. Record Drawings: Submit PDF electronic files of scanned record prints and one set of prints
  2. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
  3. Record Product Data: Submit annotated PDF electronic files and directories of each submittal
    - a. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual
  4. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- 

### PART 2 - PRODUCTS (NOT USED)



## PART 3 - EXECUTION

### 3.1 MAINTENANCE OF PROJECT RECORD DOCUMENTS

- A. Do not use record documents of any type for construction purposes.
- B. Maintain record documents in a secure location at the site while providing for access by the contractor and the architect during normal working hours; store in a fire-resistive room or container outside of normal working hours.
- C. Record information as soon as possible after it is obtained.
- D. Assign a person or persons responsible for maintaining record documents.
- E. Record the following types of information on all applicable record documents:
  - 1. Dimensional changes.
  - 2. New and revised details.
  - 3. Revisions to electrical circuits.
  - 4. Locations of utilities concealed in construction.
  - 5. Particulars on concealed products which will not be easy to identify later.
  - 6. Changes made by modifications to the contract; note identification numbers if applicable.
  - 7. New information which may be useful to the owner, but which was not shown in either the contract documents or submittals.

### 3.2 RECORD DRAWINGS

- A. Maintain a complete set of opaque prints of the contract drawings, marked to show changes.
- B. Where the actual work differs from that shown on the drawings, mark this set to show the actual work.
  - 1. Mark location of concealed items before they are covered by other work.
  - 2. Mark either record contract drawings or shop drawings, whichever are best suited to show the change.
- C. When the contractor is required by a provision of a modification to prepare a new drawing, rather than to revise existing drawings, obtain instructions from the architect as to the drawing scale and information required.
- D. Keep drawings in labeled, bound sets.
  - 1. Mark with red pencil.
  - 2. Mark work of separate contracts with different colors of pencils.
  - 3. Incorporate new drawings into existing sets, as they are issued.
- E. Where record drawings are also required as part of operation and maintenance data submittals, copy marks to another opaque print obtained from the architect.



- F. Format: Submit PDF electronic files of scanned record prints and one set of prints.
  - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
- G. Record Coordination Drawing Digital Data Files: Immediately after receiving Certificate of Substantial Completion and prior to final completion, submit the comprehensive model integrating all trade models for the project.
  - 1. Format: Same digital data software program, version, and operating system as the original Contract Drawings

### 3.3 RECORD PROJECT MANUAL

- A. Maintain a complete copy of the project manual, marked to show changes.
- B. Where the actual work differs from that shown in the project manual, mark the record copy to show the actual work.
  - 1. Include a copy of each addendum and modification to the contract.
  - 2. In addition to the types of information required on all record documents, record the following types of information:
    - a. Product options taken, when the specification allows more than one.
    - b. Proprietary name and model number of actual products furnished, for each product, material, and item of equipment specified.
    - c. Name of the supplier and installer, for each product for which neither a product data submittal nor a maintenance data submittal was specified.
- C. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications

### 3.4 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Product Data.



3.5 Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data

3.6 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

3.7 TRANSMITTAL TO OWNER (through the Architect)

A. Collect, organize, label, and package ready for reference.

1. Bind print sets with durable paper covers.

2. Label each document (and each sheet of drawings) with "PROJECT RECORD DOCUMENTS - This document has been prepared using information furnished by \_\_\_\_\_" [insert the Contractor's name], and the date of preparation.

B. Submit to the Architect, unless otherwise indicated.

END OF SECTION 01 7389



## **SECTION 01 7820 - OPERATION AND MAINTENANCE DATA**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Emergency manuals.
  - 3. Operation manuals for systems, subsystems, and equipment.
  - 4. Product maintenance manuals.
  - 5. Systems and equipment maintenance manuals.
- B. Related Requirements:
  - 1. Division 01 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

#### **1.2 DEFINITIONS**

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Architect and Commissioning Authority will comment on whether content of operations and maintenance submittals are acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
  - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file complete with Table of Contents and book marked by equipment. Submit on digital media acceptable to Architect.
    - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
    - b. Enable inserted reviewer comments on draft submittals.
  - 2. Four paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.



- C. Initial Manual Submittal: Submit draft copy of each manual at least 60 days before commencing demonstration and training. Architect and Commissioning Authority will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 30 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.
  - 1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.
  - 2. Upon completion and approval, 3 copies will be forwarded to the Owner and one copy retained by the Architect

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
  - 1. List of documents.
  - 2. List of systems.
  - 3. List of equipment.
  - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

### 2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:



1. Title page.
  2. Table of contents.
  3. Manual contents.
- B. Title Page: Include the following information:
1. Subject matter included in manual.
  2. Name and address of Project.
  3. Name and address of Owner.
  4. Date of submittal.
  5. Name and contact information for Contractor.
  6. Name and contact information for Architect.
  7. Name and contact information for Commissioning Authority.
  8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
  9. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder. Include the following, as a minimum:
1. Catalog cuts and shop drawings:
    - a. Catalog cuts shall clearly indicate the exact model and type of each piece of equipment installed in the Project, including all options provided.
    - b. Catalog cuts shall fully describe equipment including physical, electrical, mechanical and other characteristics, performance characteristics and installation or erection diagrams.
    - c. Catalog cuts shall indicate spare part numbers and name, address and telephone number of local representative or service department.
  2. Typewritten list of all subcontractors on the Project including name, address, telephone number and responsibility on the Project.
  3. Warranties, permits, inspection stickers/approvals and Certificate of Occupancy are to be included.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
  2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group



documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
  - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
  - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
  - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

## 2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
  2. Emergency instructions.
  3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:



1. Fire.
  2. Flood.
  3. Gas leak.
  4. Water leak.
  5. Power failure.
  6. Water outage.
  7. System, subsystem, or equipment failure.
  8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits.
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

## 2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  2. Performance and design criteria if Contractor has delegated design responsibility.
  3. Operating standards.
  4. Operating procedures.
  5. Operating logs.
  6. Wiring diagrams.
  7. Control diagrams.
  8. Piped system diagrams.
  9. Precautions against improper use.
  10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
  2. Manufacturer's name.
  3. Equipment identification with serial number of each component.
  4. Equipment function.
  5. Operating characteristics.
  6. Limiting conditions.
  7. Performance curves.
  8. Engineering data and tests.
  9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
  2. Equipment or system break-in procedures.



3. Routine and normal operating instructions.
  4. Regulation and control procedures.
  5. Instructions on stopping.
  6. Normal shutdown instructions.
  7. Seasonal and weekend operating instructions.
  8. Required sequences for electric or electronic systems.
  9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
  2. Manufacturer's name.
  3. Color, pattern, and texture.
  4. Material and chemical composition.
  5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source



information, maintenance service contracts, and warranty and bond information, as described below.

- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - 1. Standard maintenance instructions and bulletins.
  - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - 3. Identification and nomenclature of parts and components.
  - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
  - 1. Test and inspection instructions.
  - 2. Troubleshooting guide.
  - 3. Precautions against improper maintenance.
  - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - 5. Aligning, adjusting, and checking instructions.
  - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
  - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.



## PART 3 - EXECUTION

### 3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
  - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
  - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
  - 1. Do not use original project record documents as part of operation and maintenance manuals.
  - 2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 7820



## SECTION 01 7836 - WARRANTIES

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. **Manufacturer's Warranty:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- B. **Special Warranty:** Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner

#### 1.2 GUARANTEES AND WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of obligations under requirements of the Contract Documents.
- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  - 1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
  - 2. Refer to Divisions 2 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. **Submittal Time:** Comply with requirements in Division 01 Section "Closeout Procedures."
- D. Period for all guarantees and warranties shall commence at date of substantial completion for the entire project, as determined by the Architect and Owner.
- E. Each contractor's guarantee on all work, covered by Maintenance Bond shall be One (1) year
- F. **Submittal Time:** Submit written warranties on request of Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- G. **Partial Occupancy:** Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- H. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11-inch paper.



2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed title, "Warranties," Project Name, and name of Contractor.
- I. Submit three copies of warranty manual to the Architect. Provide additional copies of each warranty to include in operation and maintenance manuals.
  - J. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document
- 1.3 STANDARD MANUFACTURER WARRANTIES/GUARANTEES
- A. Unless otherwise noted in specifications, contractor shall provide standard of the industry and acceptable warranties/guarantees provided by all manufacturers of products used on this project. Warranties/guarantees shall commence at date of substantial completion for entire project as determined by the Architect. Review each Technical Section for other warranty requirements.

END OF SECTION 01 7836



## **SECTION 01 7900 - DEMONSTRATION AND TRAINING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.

#### **1.2 INFORMATIONAL SUBMITTALS**

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
  - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.
- C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
  - 1. Identification: On each copy, provide an applied label with the following information:
    - a. Name of Project.
    - b. Name and address of videographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date of video recording.

#### **1.4 QUALITY ASSURANCE**

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- B. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.



- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
  - 1. Inspect and discuss locations and other facilities required for instruction.
  - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
  - 3. Review required content of instruction.
  - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

## 1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

## PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    - a. System, subsystem, and equipment descriptions.
    - b. Performance and design criteria if Contractor is delegated design responsibility.
    - c. Operating standards.
    - d. Regulatory requirements.
    - e. Equipment function.
    - f. Operating characteristics.
    - g. Limiting conditions.
    - h. Performance curves.



2. Documentation: Review the following items in detail:
  - a. Emergency manuals.
  - b. Operations manuals.
  - c. Maintenance manuals.
  - d. Project record documents.
  - e. Identification systems.
  - f. Warranties and bonds.
  - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
  - a. Instructions on meaning of warnings, trouble indications, and error messages.
  - b. Instructions on stopping.
  - c. Shutdown instructions for each type of emergency.
  - d. Operating instructions for conditions outside of normal operating limits.
  - e. Sequences for electric or electronic systems.
  - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
  - a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.
  - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning



- e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

### 3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
  - 2. Owner will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- D. Provide operating and maintenance instruction to Owner's personnel for systems and components as indicated in individual Specification Sections. Provide instruction periods, comprised of approximately 50 percent classroom instruction and 50 percent "hands-on" instruction.

### 3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids.



- B. Video: Provide minimum 640 x 480 video resolution converted to .mp4 format file type, on electronic media.
1. Electronic Media: Read-only format compact disc acceptable to Owner, with computer made label.
  2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
  3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.
  4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:
    - a. Name of Contractor/Installer.
    - b. Business address.
    - c. Business phone number.
    - d. Point of contact.
    - e. E-mail address.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
1. Film training session(s) in segments not to exceed 15 minutes.
    - a. Produce segments to present a single significant piece of equipment per segment.
    - b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
1. Furnish additional portable lighting as required.
- E. Narration: Describe scenes on video recording by audio narration by microphone while or dubbing audio narration off-site after video recording is recorded. Include description of items being viewed.
- F. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

END OF SECTION 01 7900



## **SECTION 270500**

### **COMMON WORK ELEMENTS FOR COMMUNICATIONS SYSTEMS**

#### **PART 1 - GENERAL**

##### **1.1 STIPULATIONS**

- A. Project drawings and general provisions of the Contract, including but not limited to all; General and Supplementary Conditions, Division 01 Specification Sections and stipulated Specification Sections shall apply to this and all related Division 27 specification sections.
- B. Related Specification Sections:
  - 1. Division 07 – Through-penetration Firestop Systems
  - 2. Division 26 – Common Work Results for Electrical
  - 3. Division 26 – Low Voltage Electrical Power Conductors and Cables
  - 4. Division 26 – Grounding and Bonding for Electrical Systems
  - 5. Division 26 – Hangers and Supports for Electrical Systems
  - 6. Division 26 – Raceways and Boxes for Electrical Systems
  - 7. Division 26 – Identification for Electrical Systems
  - 8. Division 27 – Common Work Elements for Communications Systems
  - 9. Division 27 – Network Communications
  - 10. Division 27 – Two-Way Communications System
  - 11. Division 27 – Audiovisual Systems
  - 12. Division 28 – Common Work Elements for Electronic Safety and Security
- C. Reference Symbols:
  - 1. All device symbols are defined by the appropriate symbol schedule on the symbols and abbreviations sheet in the telecommunications systems drawing package. Not all device symbols as indicated may be required for the project.
  - 2. Because of the scale of the drawings, symbols are shown on drawings as close as possible to the mounting location. Contractor shall coordinate exact locations with all drawings and affected trades prior to submittal of shop drawings.
    - a. The Contractor shall coordinate exact locations with all architectural, security and telecommunications drawings as well as all affected trades prior to submittal of any shop drawings.
- D. Abbreviations:
  - 1. Refer to drawing legend.
- E. Definitions:
  - 1. Contract Documents: The documents consisting of the Form of Agreement between Owner and Contractor, Conditions of the Contract, (General, Supplementary, and other Conditions), Drawings, Specifications and all Addenda issued prior to the execution of the Contract.
  - 2. Contract Drawings: The drawings that form a part of the Contract Documents that provides the graphical representation of the project requirements intended design and/or performance criteria to be delivered by the Contractor.
  - 3. Reference Drawings: A drawing and/or set of drawings produced by a proprietary supplier, manufacturer, subcontractor, or fabricator included in the Contract Documents for informational purposes, providing specific information related to the installation of related appurtenances, components, devices, hardware, products, and/or systems. Reference Drawings shall also include any Contract Drawings from prior bid packages that may have pertinent information or require coordination of trades related to this contract.
  - 4. Shop Drawings: A drawing and/or set of drawings produced by the contractor, supplier, manufacturer, subcontractor, or fabricator as a detailed representation of the proper installation of the related, appurtenance, component, device, hardware, product, and/or system to be delivered in conformance to the requirements of the Contract Documents.



## 1.2 SUMMARY

- A. This Section contains the overall requirements associated with all Division 27 and Division 28 Specification Sections, and includes the project design intent for all data, voice, and security network communication cabling and equipment related to the installation of the following systems:
  - 1. Network Communications System
  - 2. Audiovisual System
- B. In addition, this section shall address all requirements for submittals, quality assurance, product handling, record documents, project conditions, installation, system performance, demonstrations, testing, and certifications for all scopes of work related to network communication cabling for this project scope of work. Refer to related Division 26, 27 and 28 specification sections and all contract drawings for additional information.
  - 1. The ICTI shall have overall responsibility for all designs, equipment and all technical support related to all Division 27 scopes of work and shall ensure full coordination of all work as required to provide the following fully operational communications network in accordance with all related specification sections and contract drawings.
    - a. The ICTI shall be responsible for providing all equipment, devices, system components, final cable terminations, programming, commissioning, and testing of all network communications cabling and equipment in accordance with all related Division 27 specification sections.
    - b. All sub-contractors shall meet the minimum technical capabilities, certifications, and licensing requirements as defined by the "Quality Assurance" chapter.
- C. Bidder shall submit complete detailed proposals with line-item cost representation for components and associated installation labor. Lump sum bids will not be accepted.
  - 1. Bidders shall include as part of the bid response the following items:
    - a. Installation schedule with proposed manpower assignments.
    - b. Resumes for project manager and lead technician for this project.
    - c. BICSI RCDD certificate and registration number.
    - d. Corning EWP Installer Certification
    - e. Tyco Electronics ND&I Member (Silver or Better)
- D. The installation, performance, features, functions, software, and programming criteria as specified herein as well as all related Division 27 specification sections have been designed to offer the maximum system efficiency, ease of operation, occupant safety and the protection of equipment as recommended by The Owner and Design Professional.
  - 1. Any deviations from the specified criteria shall be documented, reviewed, and agreed to in writing by The Owner and the Design Professional prior to submission of bids. Refer to Division 01, and all related Division 27 specification sections for any substitutions and/or project deviation requests.
    - a. The required information shall include but not be limited to reason for deviation, all differences in performance, operation and function from the herein specified requirements, all benefits and added features to the Owner as a result of the deviations and any additional incurred costs to the Owner for maintenance and long-term ownership.
    - b. Failure to provide the Owner and Design Professional with the required information shall result in any shop drawing submissions being returned for non-conformance with the contract requirements.
  - 2. The contractor and all sub-contractors for this work shall have read all the General Conditions, Special Requirements, General Requirements and all related specification sections and in the execution of all work shall be bound by all of the conditions and requirements therein.



3. Prior to the submission of the Bid any discrepancies or inconsistencies noted within these specifications and/or the project drawings shall be brought to the immediate attention of the Owner and Design Professional.
- E. All device symbols are defined by the appropriate symbol schedules as indicated by the symbol and abbreviation drawing sheets for each discipline. The Contractor shall coordinate exact locations with all architectural, mechanical, electrical, reflected ceiling, furniture drawings and door hardware specifications as well as all affected trades prior to submittal of bids.
1. All symbols are shown on the contract drawings as close as possible to their intended location. Contractor shall coordinate the installation of all equipment, devices, controls, components, cabling conduits/raceways and integration of other systems with all affected trades and specified system integrators. The contractor shall document all coordination requirements at the time of shop drawing submission.
  2. Drawings for this work are diagrammatic and intended to convey the extent, general arrangement, and locations of the work. Because of the scale of the drawings, certain basic items such as access panels, conduits, cabinet sizes, penetration sleeves, pull boxes, back-boxes and junction boxes may or may not be shown on the contract drawings. Include all items where required by code and related specification sections for proper installation of all work.
- F. Where ambiguity exists between the project specifications and the contract drawings, the superior in system performance regardless of cost shall prevail and shall be delivered by the Contractor at no additional expense to the project.
- G. Project specifications and drawings may not deal individually with every part, control, device, component, or appurtenance which may be required to produce the equipment performance for the specified system and/or as required for compliance with all specified systems integration.
1. Include such items and components, as required, for complete operational systems as defined by the project documents, whether specifically indicated or not. The contractor shall be responsible for providing conduits/raceways, cable terminations, controls, systems, equipment, materials, devices, components, electrical power, equipment racks/cabinets, software, programming, commissioning, testing and all appurtenances as well as the integration of any ancillary systems or Owner provided equipment/components/systems.
  2. Coordinate with other applicable trades in submittal of shop drawings and the installation of all systems. All shop drawings shall detail space conditions in order to accommodate other concerned trades, all equipment locations are subject to final review by the Owner and Design Professional.
- H. Use of Premises
1. General: The Contractor shall have limited use of premises for construction operations only as required to meet the scope of work as delineated by the Contract Documents.
  2. The Contractor shall design, prepare, schedule, and coordinate all scopes of work without disruption of any existing system functions or the daily operation of the facility. All communications cabling and equipment shall be installed in such a manner that all new controls, equipment and/or devices shall be installed, programmed, and tested prior to switchover and/or disconnecting of any existing communications systems.
  3. The contractor shall coordinate all installation activities so as not to disrupt the daily routines of the facility and shall include any costs related to a phased construction methodology including but not limited all necessary temporary equipment, devices, components, or systems as well as any labor costs associated with any installation, commissioning, testing demolition of any systems required to be performed after normal business hours of the facility.
    - a. Contractor shall plan, schedule and install all communications cabling and equipment in accordance with all requirements of the project construction schedule. Refer to related specification sections for additional information related to project scheduling and facility access.



- b. The contractor shall coordinate all installation and demolition activities so as not to disrupt the daily routine of the facility or negatively impact the integrity of the facility's security and life safety measures.
- c. Contractor shall demolish all existing network communications systems, cabling, devices, components and/or controls not integrated with the new telecommunications system at the completion of each project phase and only after final acceptance by Owner, Owner Representatives, and the Design Professionals. The removal or demolition of all existing system devices and/or field wiring not incorporated into the new systems shall be performed in such a manner consistent with all requirements of NFPA 70.

### 1.3 REFERENCES

- A. References to industry and trade association standards as well as all building codes are minimum installation requirements. The codes, standards, and agencies listed below shall form a part of this specification section and all work shall comply with the latest adopted standards.
- B. Where the contract drawings and specifications mandate a greater requirement or performance than those specified by any of the below referenced codes and standards, the Contract Documents shall then be the governing requirements for this project. The minimum codes and standards to be applied for this project shall be the following:
  - 1. All applicable requirements of NFPA 70 "National Electrical Code" including, but not limited to:
    - a. Article 250, Grounding
    - b. Article 300, Part A. Wiring Method
    - c. Article 310, Conductors for General Wiring
    - d. Article 725, Remote Control, Signaling Circuits
    - e. Article 770, Optical Fiber Cables and Raceways
    - f. Article 800, Communication Systems
  - 2. National Fire Protection Association:
    - a. NFPA-72: National Fire Alarm and Signaling Code
    - b. NFPA-75: Standard for the Protection of Electronic Computer/Data Processing Equipment
    - c. NFPA 90A: Standard for the Installation of Air-Conditioning and Ventilating Systems
    - d. NFPA 92A: Standard for Smoke-Control Systems
    - e. NFPA-99: Standard for Health Care Facilities
    - f. NFPA-101: Life Safety Code
    - g. NFPA-130: Standard for Fixed Guideway Transit and Passenger Rail Systems
  - 3. ANSI/TIA Compliance: Comply with the following Electronics Industries Association Standards:
    - a. ANSI/TIA-568C: "Commercial Building Telecommunication Standard"
    - b. ANSI/TIA-569: "Commercial Building Standard for Telecommunications Pathways and Spaces"
    - c. ANSI/TIA-455: "FOTP-61, Measurement of Fiber or Cable Attenuation Using an OTDR"
    - d. ANSI/TIA-606: "The Administration Standard for the Telecommunications Infrastructure of Commercial Building"
    - e. ANSI/TIA-607A: "Commercial Building Grounding and Bonding Requirements for Telecommunications"
    - f. ANSI/TIA-492A: "Detail Specification for 850-nm Laser Optimized 50-µm Core Diameter/125µm Cladding Diameter Class 1a Graded Index Multi-Mode Optical Fibers"
    - g. ANSI/TIA-492CAAA: Detail Specification for Single-Mode Optical Fiber
  - 4. Underwriters Laboratories, Inc.:



- a. UL 486A: "Wire connectors and soldering lugs for use with copper conductors"
  - b. UL 1449: "Transient voltage surge suppressors"
  - c. UL 1581: "Standard for Electrical Wires, Cables, and Flexible Cords"
  - d. UL 478: "Standard for Electronic Data-Processing Units and Systems"
  - e. UL 83: "Thermoplastic-Insulated Wires and Cables,"
  - f. UL 910: "Test Method for Fire and Smoke Characteristics of Cables Used in Air-Handling Spaces." Provide products which are UL-listed and labeled.
  - g. UL 1069: Hospital Signaling and Nurse Call Equipment
5. Federal Communications Commission:
- a. FCC Regulations Part 15 Title 47.
6. Institute of Electrical and Electronic Engineers (IEEE)
- a. IEEE 802.3 - "Carrier Sense Multiple Access with Collision Detection," and all applicable supplements a through af".
  - b. IEEE 802.3.u-100 - "Base T/100-Base-TX, Fast Ethernet"
  - c. IEEE 802.3.z - "Gigabit Ethernet"
  - d. IEEE 802.3.ab - "1000 Base T"
  - e. IEEE 802.3.ae - "10 Gigabit Ethernet"
  - f. IEEE 802.3.af - "Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI) that"
  - g. IEEE 802.11.ax - "Wireless Transmission Standard"
  - h. IEEE 802.11.bt - "Power over Ethernet"
7. ISO/TC - International Organization for Standardization's (ISO) Technical Committee (TC)
- a. 21730 - Health informatics - Use of mobile wireless communication and computing technology in healthcare facilities.
8. NEMA/ICEA Compliance:
- a. WC-5 - "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy,"
  - b. WC30 - "Color Coding of Wires and Cables," pertaining to control and signal transmission media.
9. ASTM Compliance: Comply with applicable requirements of D-2219 and D-2220. Provide copper conductors with conductivity of not less than 98% at 20°C (68°F).
10. BICSI -TDMM Latest edition
11. ADA Standards for Accessible Design
12. Local Authority Having Jurisdiction
13. National Electrical Manufacturers Association (NEMA)

#### 1.4 SUBMITTALS

- A. In addition to all submittal requirements as stipulated by Division 01 specifications sections, the Contractor shall provide all shop drawing submittals in accordance with the following:
- 1. Owner and Design Professional approval shall be obtained for all equipment and material before delivery to the job site. Delivery, storage, or installation of equipment or material which has not had prior approval will not be permitted at the job site.
  - 2. All submittals shall include adequate descriptive literature, catalog cuts, shop drawings, and other data necessary for The Owner to ascertain that the proposed equipment and materials comply with specification requirements. Catalog cuts submitted for approval shall be legible and clearly identify equipment being submitted.
  - 3. Submittals shall be provided as a complete submission; no partial submissions will be accepted. Failure to provide a complete submission shall result in all submittals being returned for resubmission.
  - 4. Submittal data shall be submitted in a single package, containing the below in the following order:
    - a. Cover Sheet:



- 1) Include name of supplying contractor and project name.
- b. Product Data:
  - 1) Include a catalog sheet per product of equipment listed in the Detailed Bill of Materials, in the exact order as the Detailed Bill of Materials. Each catalog sheet shall describe mechanical, electrical and functional equipment specifications. The catalog sheet must also include a image of the product. Photocopy duplications of the manufacturer's original equipment catalog sheets will be allowed as long as they provide adequate clarity of both the printed word and graphics/pictures. If more than one product is shown on the catalog sheet the intended product must be denoted by either an arrow or highlight.
- c. Installer Qualifications:
  - 1) Provide the following to demonstrate adequate experience and minimum qualifications:
    - a) Corning EWP Certificate
    - b) Commscope Trunet Certificate
  - 2) Installing company shall be certified by manufactures in aspects of design, installation and testing of optical and Category 6 metallic premise distribution systems, be a manufactures Value Added Reseller (VAR) in good standing, with a current, active certification that has been continuous for at least the last 24 months. This applies to both the COMMSCOPE/TE and Corning certifications.
- d. Prequalification Warranty:
  - 1) Recently dated (within one year from submittal date) support letter from manufacturer stating that the supplying contractor is authorized to obtain for the owner the Extended Warranty for Cabling System and the Extended Warranty for System Assurance.
  - 2) Prequalification shall include demonstrating 24 months continuous active certification in the extended warranty program, from the date of the submittal.
5. No substituted equipment shall be reviewed without prior approval in accordance with the requirements of "substitutions" under Division 1 specification section.
6. Mark the submittals, "SUBMITTED UNDER SECTION \_\_\_\_\_."
- a. Submittals shall be marked to show specification reference including the section and paragraph numbers.
7. The Contractor shall schedule submittals in order to maintain the project schedule. For coordination requirements refer to Division 01 Specification Sections, which outline basic submittal requirements and coordination. All Division 01 Specification Sections requirements shall be used in conjunction with this specification section.
8. Prior to any submission the contractor shall be responsible for performing the following quality control items to ensure compliance with all project requirements:
  - a. Review all Shop Drawings and Product Data
  - b. Review all field measurement criteria.
  - c. Review all field construction criteria and methodologies.
  - d. Review all catalog numbers and similar data.
  - e. Review all coordination requirements of affected trades.
  - f. Review conformance to all appropriate specification sections.
9. All shop drawings shall be prepared using latest version of AutoCAD or Revit, drawn accurately, and in accordance with The Owner's Standards. The Contractor shall not reproduce the Contract Documents or copy standard information as the basis of the technical data, hand drawn mark-ups of the original project drawings shall not be acceptable. Failure to provide a complete set of "contractor prepared" installation



drawings at the time of submittal shall result in all submittals being returned for resubmission.

10. Submission Packaging: The Contractor shall organize the submissions according to the following packaging requirements.
    - a. Electronic Copy Submission: One complete set of electronic equipment data sheets and drawings submitted in PDF format and collated in two distinct files:
      - 1) Equipment Data Sheets, equipment schedules, alarm matrixes cable termination spread sheets, and all related pertinent information.
      - 2) Drawings including all site plans, floor plans, risers, point to point wiring, grounding, installation details and mounting elevations.
    - b. Hard Copy Submission: Submit hardcopies of all shop drawings and product datasheets in accordance with the requirements the of Division 01 specifications.
  11. The ICTI shall have an RCDD professional review all shop drawings related to network designs, installations, testing, certifications, and structured cabling layouts for communications systems. Failure to provide RCDD sealed shop drawings shall result in all shop drawings being returned for resubmission without any reviews taking place.
  12. The Owner's and the Design Professional's review of the shop drawings and/or samples does not relieve the Contractor from compliance with the requirements of the project documents. Unless the Contractor has informed The Owner and the Design Professional in writing of such deviation at the time of submission, has noted the deviation on the shop drawings, and the Owner and the Design Professional has given written approval of the specific deviation to the project document.
    - a. All project requirements shall stand. The Owner's and the Design Professional's review does not relieve the Contractor from responsibility for any errors of omission in the submission of shop drawings and/or samples.
  13. Submit all system testing, commissioning, and startup procedures to be employed. Include all estimated times for performance of all tests, all test equipment and workforce necessary for testing.
  14. Submit all qualifications and certifications in accordance with the requirements as specified elsewhere in this specification section.
  15. Submit project schedule outlining the time frames for all equipment with long lead times for equipment deliveries; include all system commissioning, testing and training time expectations. Project schedule shall be submitted as CPM schedule and shall utilize a software-based project management program.
- B. Shop Drawings:
1. All shop drawings shall include sufficient information, clearly presented, to determine full compliance with all project drawings and specifications. Include the following information as applicable for review; failure to provide all information listed below shall result in all shop drawing submittals being returned for resubmission:
    - a. All Building Floor and Site Plans.
    - b. All equipment, devices and components with manufacturer's name(s), model numbers,
    - c. All equipment, device and component electrical ratings and power requirements
    - d. All equipment, device, and component performance ratings.
    - e. All equipment /device cable voltage drop calculations,
    - f. All dB losses for all fiber optic devices and cabling,
    - g. All Speaker taps, voltages, and zoning
    - h. All equipment rack/cabinet layouts and rack/cabinet sizes.
    - i. All device-mounting elevations.
    - j. All device wiring details.
    - l. All grounding and bonding connections.



- m. Complete point-to-point-wiring diagrams for all systems. Include all equipment and wiring termination schedules and/or matrices.
  - 2. Provide a complete set of "contractor prepared" installation drawings. Drawings at the minimum shall consist of floor plans indicating all; passive and active electronic component locations, field devices, device identifications, distribution racks, patch panels, control panels, auxiliary control panels, power supplies, conduit, and cable requirements as well as all 120-volt electrical circuit locations and designations.
    - a. Drawings shall include at the minimum the following:
      - 1) Detailed equipment layouts for all communications rooms. Coordinate all room layouts with affected trades.
      - 2) Floor plan drawings showing locations of all equipment, devices, equipment cabinets and/or rack locations. Identify type and sizes of all equipment cabinets and/or racks.
      - 3) All cable tray layouts, and conduit routing of all conduits 2-inches in diameter or greater.
      - 4) System riser diagrams and single line drawings
      - 5) Equipment wattage for each location and estimated BTU production.
      - 6) Detailed equipment layouts for all equipment consoles. Indicate all equipment locations, power connections and installation details.
      - 7) All equipment mounting hardware/brackets and installation details. Identify type size, load capacities of all mounting hardware/brackets; include all mounting and installation details, all space requirements, any special architectural modifications required.
      - 8) Outline drawings of all equipment cabinets/racks showing the relative position of all major components, all-wiring and grounding terminations. Include all panel, cabinet and/or rack dimensions.
      - 9) All grounding and bonding termination points
  - 3. Provide a complete termination schedule of all communications device drop/outlet locations; indicate on the installation drawings all device drops/outlets' unique identification which shall correspond with schedule and drawings.
- C. Equipment Submittals:
  - 1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
    - a. Include all equipment data sheets pertinent to equipment provided. All data sheets shall be highlighted and annotated indicating specific equipment and options supplied. Failure to provide the proper annotation of all equipment shall result in submittals being returned for resubmission.
  - 2. Submit complete technical data necessary to evaluate the material and equipment. Include a complete technical specification for the submitted equipment, noting differences and adherence to this Section. Failure to provide the required data will result in all submittals being returned for resubmission.
  - 3. Submit performance data, equipment ratings, cable requirements, control sequences, GUI based control panels, programming matrixes, logic diagrams and all other descriptive data necessary to describe the installation and operations of the system being provided. Failure to provide the required data will result in all submittals being returned for resubmission.
  - 4. Parts list which shall include those replacement parts recommended by the equipment manufacturer, quantity of parts, current price, and availability of each part.
- D. Maintenance and Operation Manuals: Submit in accordance with all requirements of Division 01 specification sections and as herein specified.
  - 1. Maintenance and Operation Manuals: Submit as required for systems and equipment specified in the technical sections. Furnish in electronic format. Furnish one complete



manual as specified in the technical section but in no case later than prior to performance of systems or equipment test and furnish the remaining manuals prior to contract completion.

2. Inscribe the following identification on the cover: the words "Maintenance and Operations Manual", include the name and location of the system, equipment, building, name of Contractor, and contract number. Include in the manual the names, addresses, and telephone numbers of each subcontractor installing the system or equipment and the local representatives for the system or equipment.
3. Provide a "Table of Contents" and assemble the manual to conform to the table of contents, with tab sheets placed before instructions covering the subject. The instructions shall be legible and easily read, with large sheets of drawings folded in.
4. Furnish (1) digital copy of all Maintenance and Operation Manuals in PDF format.
5. The manuals shall include:
  - a. Internal and interconnecting wiring and control diagrams with data to explain detailed operation and control of the equipment.
  - b. A control sequence describing start-up, operation, and shutdown.
  - c. Description of the function of each principal item of equipment.
  - d. Installation and maintenance instructions.
  - e. Safety precautions.
  - f. Diagrams and illustrations.
  - g. Testing methods.
  - h. Performance data.
  - i. Pictorial "exploded" parts list with part numbers. Emphasis shall be placed on the use of special tools and instruments. The list shall indicate sources of supply, recommended spare parts, and name of servicing organization.
  - j. Appendix; list qualified permanent servicing organizations for support of the equipment, including addresses and certified qualifications.
6. Approvals will be based on complete submission of manuals together with shop drawings.

## 1.5 QUALITY ASSURANCE

- A. Integrator Qualifications: The projects' Information Communication Technology Integrator (ICTI) shall be an accredited and authorized distributor of the appropriate equipment manufacturer and shall be fully certified in the installation, testing and programming of all equipment being provided.
  1. The ICTI shall be capable of providing documented successful work experience of at least three (3) facilities of equivalent size and technical requirements utilizing the proposed equipment being provided and have on staff a minimum of one full time individual that holds a current RCDD registration.
  2. Cable Installer Qualifications: The cable installation contractor shall demonstrate not less than three (3) years' experience in the installation of structured cabling systems and shall have on staff a minimum of one full time member that holds a current BICSI level II installer credential.
    - a. NOTE: The installation of all communications cabling shall be under the direct supervision of a current BICSI level II installer who shall be knowledgeable in the following technical applications:
      - 1) The Routing and installation of shielded, unshielded, twisted pair, coaxial and fiber optic cables.
      - 2) Bonding and grounding of cable tray and equipment racks.
      - 3) Fusion splicing of fiber optic cabling.
      - 4) Testing copper conductors for electrical continuity.
      - 5) Testing and Certifying of UTP structured cabling for attenuation and worst case near end cross talk.
      - 6) Testing and Certifying of ALL fiber optic cabling employing an Optical Time Domain Reflectometer (OTDR) in accordance with TIA protocols.



- 7) Testing and Certifying of coaxial cable networks for RF leakage
  - 8) Termination, connection, and testing of shielded and un- shielded twisted pair cable, coaxial cabling and fiber optic cabling on all specified connectors, electrical protection blocks, termination blocks and patch panels.
  - 9) Generally accepted industry standards, as well as manufacturers written installation instructions, will be used for in-process quality control and final acceptance of the work installation.
3. The Owner and the Design Professional reserve the right to require the Contractor to submit a list of installations where the products have been in operation before approval.
    - a. Experience shall be defined as the completion of the specific system being provided, with that system being successfully operated by the Owner for its intended purpose for at least three (3) years.
    - b. In addition to the above, "Experience" shall also be defined as the completion of modifications and renovations to any associated system being provided in any existing occupied facility of this size and magnitude.
    - c. For each facility submit the following:
      - 1) Name and location of facility
      - 2) Date of Occupancy or beneficial use by Owner
      - 3) Owner's representative to contact and telephone number
      - 4) Construction Manager or General Contractor
      - 5) Project Architect or Engineer
      - 6) Provide information on the installed locations with operational equipment
      - 7) Registration number and expiration date of RCDD professional
      - 8) Registration number and expiration date of Level II installer.
  4. Service Qualifications: The ICTI shall be a permanent service organization maintained and/or trained by the product manufacturer on the products being provided for this project.
    - a. The ICTI shall be (where required) properly licensed by the governing municipality to provide the services and work for the specific system being installed. In addition, all integrators shall be capable of providing full service for the entire warranty period within an 8-hour response time upon notification of a service emergency.
  - B. Manufacturer's Qualifications: The manufacturer shall regularly and presently produce, as one of the manufacturer's principal products, the equipment and materials specified for this project, and shall have manufactured the items for at least three years.
    1. Product Qualification: The Manufacturer's product shall have been in satisfactory operation, on three installations of similar size and type as this project, for approximately three years.
      - a. The manufacturers shall submit the appropriate documentation certifying that the project ICTI is a qualified service provider of all manufacturers' products being provided for this project.

## 1.6 RECORD DOCUMENTS

- A. In addition to all general provisions of the Contract, including but not limited to all; General and Supplementary Conditions, Division 01 Specification Sections include the following project requirements:
  1. Provide complete set of finalized copies of record documents prior to final acceptance of the project by The Owner and the Design Professional in accordance with all requirements of Division 01 specification sections. At the minimum the record documents shall contain all information, data and drawings as described in Chapter 1.4 "Submittals" of this specification section.
    - a. As-built documents shall be submitted in both paper and electronic media formats in the quantities as specified by Division 01 specification requirements.



- 1) All electronic record drawings shall be prepared and submitted utilizing AutoCAD or Revit as manufactured by Autodesk. Where electronic documents are prepared using other than an AutoCAD or Revit manufactured by Autodesk, the contractor shall provide to The Owner and Design Professional the necessary software to electronically view the submitted documents.
- 2) All electronic data sheets, control sequences, programming matrixes and other descriptive data shall be provided in PDF formatted documents.
- 3) Copies of all current system programming and associated software shall be provided on downloadable media formatted for the use in restoration all system operations and functionality in the event of a catastrophic failure.

## **1.7 EXTRA MATERIAL**

- A. In addition to all general provisions of the Contract, including but not limited to all; General and Supplementary Conditions, Division 01 Specification Sections refer to related specification sections "Extra Material" for specific requirements.
- B. All Extra materials shall be provided at the time of final acceptance of the project and a signed packing list shall be obtained at the time of delivery. At no time is the contractor to use the extra materials provided for this project to replace malfunctioning or damaged equipment and or components.
- C. Provide 5% of all material as "Extra Material."

## **PART 2 – PRODUCTS**

### **2.1 MANUFACTURED PRODUCTS**

- A. Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items, that meet and/or exceed the specified performance and features of the equipment and/or systems and for which replacement parts shall be readily available to the system integrator and/or using agency.
  1. When more than one unit, device, or component of the same class of equipment is required, such units, devices or components shall be the product of a single manufacturer.
  2. Acceptable manufacturers for each system shall be as specified and shall be provided in full compliance with the requirements of this and all related specification sections and contract drawings.
    - a. Manufacturers listed as acceptable shall not negate the contractors' responsibility for providing all equipment, devices, components and/or systems, in accordance with all functions and performance requirements of the Contract Documents.
    - b. Where manufacturer and/or manufacturer model numbers reference specific system components in the related specification sections, it is to establish the performance requirements and quality of the systems and components only.
      - 1) It is in no way an inference that the referenced model numbers are the manufacturer's current product and are the only acceptable components for this project unless specifically referenced as "no substitutions."
    - c. The Contractor shall provide the manufacturers' most current product that shall meet and/or exceed the specified performance and features of the equipment and/or systems.
    - d. Equivalent UL-listed equipment may be substituted for the approved manufacturers unless stipulated by other specification sections as "No Substitutions." All substitutions shall be submitted for approval by The Owner and the Design Professional in accordance with all requirements of Division 01 specification sections and Chapter 1.4 "Submittals" of this specification section.
      - 1) Where systems and/or components are referenced as "no substitutions" the specific system and/or components shall be provided.
      - 2) All substitutions shall comply with all requirements as specified above and all system performance standards shall be maintained.



- 3) The contractor shall stipulate the following information impacted by such a substitution.
    - a) Any and all extensions in time impacted by the substitution.
    - b) Any changes to the architectural or structural elements to the project
    - c) Differences in operation and/or performance from intended system criteria.
  - 4) Failure to provide the required substitution information shall result in “without consideration” the immediate rejection of the substituted equipment and/or systems.
- B. Equipment Assemblies and Components:
1. Components of an assembled unit need not be products of the same manufacturer.
    - a. Manufacturers of equipment assemblies, which include components made by others, shall assume complete responsibility for the final assembled unit.
    - b. Components shall be compatible with each other and with the total assembly for the intended service.
    - c. Constituent parts which are similar shall be the product of a single manufacturer.
    - d. Factory wiring shall be identified on the equipment being furnished and on all wiring diagrams.
- C. Compatibility and Interoperability of System Components and Devices
1. Where multiple components, devices and/or systems are intended to be interconnected and components of a complete system in accordance with any related specification sections, it shall be the Contractor’s responsibility to verify interoperability and compatibility of said components, devices and/or systems in full conformance to the specified performance criteria prior to the submission of shop drawings.
  2. Where specified devices are found to be incompatible or incapable of performing as specified in a seamless manner, the contractor shall notify the Engineer in writing prior to submission of shop drawings. Failure to properly identify such functional discrepancies shall not relieve the contractor from providing a complete and fully functional system in accordance with the requirements of all related specification sections.
- D. Where Factory or Off-Premises Testing of any equipment, product or assembly is recommended by the product manufacturer or where specified as part of this section and/or any related specification section:
1. The Owner, the Design Professional and/or Owner representatives shall have the option of witnessing all factory tests. The Contractor shall notify The Owner and the Design Professional at a minimum of thirty (30) working days prior to the performance of any factory or off-premises tests.
    - a. Where the factory or assembly point for all off-premises testing is not within two (2) hours driving time from the project location, the system integrator shall include as part of this project all per diem costs (travel, meals and lodging) for a minimum of two representatives from the using agency and the project Design Professional to witness all testing.
  2. Provide four (4) copies of certified test reports containing all preliminary test data and testing procedures shall be furnished to The Owner and the Design Professional prior to any final testing and not more than ninety (90) days after completion of any tests.
  3. When equipment, product or assembly fails to meet any factory or off-premises tests, retesting of equipment, product or assembly shall be mandated, the manufacturer/integrator shall be liable for all additional expenses, including all expenses incurred by The Owner and the Design Professional for witnessing the retesting of any equipment, product, or assembly.
- E. Unspecified Equipment and Material: Any item of equipment or material not specifically addressed on the drawings or in this document and required to provide complete and functional



Structured Cabling System shall be provided in a level of quality consistent with other specified items.

### **PART 3 – EXECUTION**

#### **3.1 EQUIPMENT PROTECTION**

- A. Protect all materials, equipment, devices, or components permanently installed and/or stored on the job site. Protect all materials, equipment, cabling, devices, or components during construction and after installation. Provide appropriate protection of all materials, equipment, components and/or devices until time of substantial completion. All materials, equipment, components and/or devices shall be protected during shipment and storage against any physical damage, dirt, moisture, cold, snow, wind, or rain:
  - 1. During installation, enclosures, racks/cabinets, equipment, controls, controllers, circuit protective devices, and other like items, shall be protected against entry of any foreign matter; and shall be vacuum cleaned both inside and outside before testing and operating and repainting if required.
  - 2. Any materials, equipment, components and/or devices, stored on site, which have been deemed by The Owner or the Design Professional to exhibit any indications of damage or exposure dust or moisture shall not be installed and shall returned to the source of supply for immediate replacement.
    - a. The use of spare parts or the return of defective equipment for repair to mitigate the damage of defective materials, equipment, components and/or devices shall not be acceptable. All materials, equipment, components and/or devices shall be new and unused until final acceptance by the Design Professional.
  - 3. Provide and apply protective material immediately upon receiving the products and maintain throughout the construction process.
    - a. Painted surfaces shall be protected with factory installed removable heavy kraft paper, sheet vinyl or equal.
    - b. Any damaged paint on equipment and materials shall be refinished with the same quality of paint and workmanship as used by the manufacturer so repaired area is not obvious or detectable.
  - 4. Failure to properly protect all materials, equipment, components and/or devices prior to final acceptance shall constitute sufficient cause for rejection of materials, equipment, components and/or devices should any defects, damage or degradation in performance is observed.
- B. Seismic Performance: All equipment, bracing, and anchoring shall be rated for the seismic zone of the geographical area in which the project resides and shall withstand the effects of earthquake motion and wind forces in accordance with the current editions of the IBC and ASCE/SEI 7. Refer to Division 01 and Division 26 – Hangers and Supports for additional seismic information and requirements.
  - 1. Equipment shall include, but not be limited to, racks/cabinets, cable/basket/ladder tray, conduit, cameras, and all appurtenances.
- C. Immediately replace all malfunctioning materials, equipment, components and/or devices with new unused products up until the time the Design Professional issues final acceptance of the system. The returning of any malfunctioning equipment, devices and/or components to the manufacturer for repair and then reinstallation at the project site shall not be acceptable.
  - 1. All replacement materials, equipment, components and/or devices shall be factory new and not scavenged from the Project's spare parts inventory or factory recycled products unless expressly identified by contractor prior to replacement and approved beforehand by the Design Professional.

#### **3.2 WORK PERFORMANCE**

- A. Installation, final termination, testing, start-up and commissioning of all systems, system components and cabling infrastructures shall be under the direct supervision of the appropriate



system integrator. The integrator shall be an accredited and authorized distributor of the appropriate equipment manufacturer and shall be fully certified in the installation, testing, commissioning, and programming of all equipment, devices, components and/or systems being provided as part of this project.

- B. Job site safety and worker safety is the responsibility of the Contractor. Ensure that safe access and egress from all work areas is maintained during movement and installation of materials. Clean up all debris generated by installation activities. Keep all communication equipment rooms free of debris at all times.
- C. Pre-installation Conferences: Include provisions to attend all pre- installation conferences at Project site in compliance with all requirements in Division 01 specification section and as herein specified. Review methods and procedures related to installation and operations of all communications systems, including, but not limited to, the following:
  - 1. Inspect and discuss electrical and equipment roughing-in related to all communications systems as well as other preparatory work required to be performed by other trades.
  - 2. Review and discuss all work, equipment deliveries, installation procedures and related scopes as required to conform to the phased construction schedule.
  - 3. Review sequence of operations for each type of system, control, cabling and/or integration to any systems and/or equipment provided by other trades
  - 4. Review and finalize construction schedule and verify availability of materials, installation personnel, equipment, and any preparatory work by other trades needed to make progress and avoid delays.
  - 5. Review required start-up, testing, commissioning, and certifying procedures to be employed for each system and any impacts to other trades.
- D. For work on existing facilities, arrange, phase, and perform work to assure the operation of all communications systems for other buildings and contiguous spaces at all times. Refer to Division 01 specification section for additional information.
- E. All new work shall be installed and connected to existing work neatly and carefully. Disturbed or damaged work shall be replaced or repaired to its prior conditions, as required by Division 01 specification sections.
- F. Coordinate the installation of all cabling, conduits/raceways and cable trays and equipment with applicable trades to ensure proper operation and function of all integrated systems in accordance with all related specification sections. Refer to Division 01 specification section for additional project coordination requirements.
  - 1. Coordinate with all trades at the time of shop drawing submission detailing all space and/or room conditions. The contractor shall coordinate with the appropriate trade all conditions impacting the installation of any system, conduit or cable tray including but not limited to all equipment locations, site conditions, ceilings, lighting fixtures, fire protection piping and ductwork layouts to the satisfaction of all concerned trades, subject to final review by the Design Professional.
    - a. Coordinate exact location of all desktop/counter/wall mounted equipment with The Owner, the Design Professional, and all affected trades prior to the installation of any equipment and/or cabling.
    - b. Coordinate exact location(s) of all cable, conduits, equipment and/or devices installations with all architectural plans, site plans, reflected ceiling plans and affected trades prior to installation.
      - 1) Equipment installations requiring coordination with other trades the contractor shall provide all templates, back- boxes and equipment anchor bolts for mounting or flush mounting preparation, (e.g., pedestals or other devices requiring mounting on walls, concrete pads, or other materials). Coordinate delivery of templates and equipment anchor bolts to preclude any delay in the construction schedule or the work of the affected trade.



- c. If installation of equipment, devices, cabling, raceways, cable trays and/or conduit is performed prior to coordination with other trades, which interferes with work of other trades or operation and maintenance of the facility, make necessary changes to correct the condition at no additional cost to The Owner.
- d. Prior to the final programming of any systems review with The Owner and the Design Professional all system features, functions, system operations, network mapping, system integrated responses and all related programming as required for the proper operation of the respective communications systems.

**3.3** The Contractor shall maintain a complete set of current and up to date set of shop drawings and equipment submissions at the job site at all times. The Shop drawings and all other submissions shall be marked up to reflect all as-built conditions and shall be made available for review by the Design Professional at request.

#### **3.4 EQUIPMENT INSTALLATION AND REQUIREMENTS**

- A. All system equipment installations shall be in accordance with good engineering practices, NEC, local building codes, and all manufacturer's requirements. Cable terminations at all equipment locations shall comply with all state and local electrical codes. All wiring shall test free from all grounds, shorts, stray voltages and EMI.
- B. Follow manufacturers' instructions for installing components and adjusting all equipment and cabling. Submit one (1) copy of such instructions to The Owner and the Design Professional before installing any equipment. Provide an additional copy of such instructions at the equipment during any work on the equipment. Where no instructions are included with the equipment, follow accepted industry practices and workmanlike installation standards.
- C. Equipment location shall be as close as practical to locations as indicated on the contract drawings.
  - 1. Provide all equipment clearances in accordance with NEC requirements. Arrange equipment to facilitate unrestricted access for maintenance and service around all equipment, components and/or cable terminations.
- D. Inaccessible Equipment:
  - 1. Where The Owner and the Design Professional determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, the equipment shall be removed and reinstalled as directed at no additional cost to the project.
    - a. "Conveniently accessible" is defined as being capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as, but not limited to, motors, pumps, belt guards, transformers, piping, ductwork, conduit, and raceways.

#### **3.5 COMMUNICATIONS CABLING REQUIREMENTS**

- A. Cabling shall be sized to support the appropriate communication system. All communications cable installations shall be in accordance with good engineering practices as established by IEEE, and NEC. All cabling shall meet all state and local electrical codes.
  - 1. Contractors shall have the option to combine all cable home runs and conductors of same type and voltage "class" in accordance with NEC requirements unless specified elsewhere. Size all conduits and install all conductors in accordance with NEC requirements and manufacturers recommendations.
    - a. All communications cabling located above inaccessible ceilings, exposed ceilings, areas outside of tenant spaces shall be installed in conduit and routed to nearest cable tray or J-hook system in accessible ceiling areas.
    - b. All conduit shall run parallel and perpendicular to building column lines.
    - c. Cabling installed above hard ceiling spaces shall be installed in dedicated conduits.



- d. No exposed cabling will be acceptable in finished or occupied spaces of the facility without approval by The Owner and the Design Professional.
  - e. Any communications system cabling installed exterior to the building and/or all cabling being routed from the facility to any remote location external to the project location shall utilize OSP rated fiber optic cable installed in conduit system.
- 2. Do not install bruised, kinked, scored, deformed, abraded or otherwise damaged cable. Do not splice cable between indicated terminations, taps, or junction points. Remove and discard cable where damaged during installation and replace it with new cable.
- 3. Ensure that all communications cabling supports (conduits, support grips, cable trays and cable termination panels) are fully installed before proceeding with cable installation.
- 4. At no time shall any cables be installed and left unsupported, nor shall cables be tie-wrapped to any other supporting structure in lieu of specified cable supports. Do not tie-wrap or permanently affix cable bundles to approved cable supports.
  - a. NOTE: Cable bundles shall not be cinched too tightly; all cable ties shall be hook-and-loop ("Velcro") tie-wraps only.
- 5. The Contractor shall not permit any communications cabling to lie unprotected on the floor at any time. If cables must be left on any floor, protect the cables so that they may not be walked on or have any material or equipment placed or rolled on top. Replace all damaged cables from demarcation to termination point; no splicing of damaged cables shall be permitted.
- 6. Maintain manufacturers recommended minimum bend radii of all cabling. Do not stretch, stress, tightly coil, bend or crimp cables. The Contractor shall keep all cabling out of the way of other trades during staging of any work. The contractor at the contractor's expense will replace all severely stressed or damaged cables, equipment, and materials as determined by the Owner and the Design Professional.
- 7. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment. The maximum allowable length does not include an allowance for the length of 16 feet in the horizontal cross-connect.

**B. Unshielded Twisted Pair (UTP) Cable**

- 1. Refer to specification section 271100 for material.
- 2. All data TCP/IP based copper network cabling shall be concealed above suspended ceilings, bundled, and independently supported to the building structure. All cabling bundles shall be plenum rated and shall not contain any AC carrying conductors or non-associated network cables.
  - a. All cabling shall be terminated onto termination blocks.
  - b. Copper station cabling may be run outside of conduits and above suspended ceilings only between the cable tray and the conduit wall stub-up.
  - c. All horizontal and backbone cable installed above accessible ceilings shall be installed on J-hooks, cable trays, dedicated conduits, or in cable chases and/or a combination thereof as indicated contract drawing or specified. In no case shall cable be supported on ceiling tiles, T-bars, or tie-wrapped to any conduit or pipes.
    - 1) Cables shall not be cinched too tightly; cable ties shall be VELCRO type tie-wraps only. Plastic wire ties shall not be accepted on any cabling.
    - 2) Horizontal network cabling shall not exceed a maximum distance of 295 feet from the associated communications room termination point to the furthestmost work area outlet termination point.
    - 3) Cable Support: Properly secure independently to the permanent building structure where not installed in raceway. Provide J-hooks at regular intervals appropriate to the cable and wire size. See drawing details for spacing requirements.
    - 4) Cables shall not lay loose on ceiling tiles or grids. Cables must be supported in all areas. Bridle rings and tie-wrapped supporting methods are not acceptable.



- 5) Install all cabling parallel to building lines and follow building structure. Use cable support equipment/hardware recommended by the manufacturer and/or as herein specified.
- 6) Provide all terminations, cross-connects, wire management, surge protectors, etc. For a complete and operational system.
- 7) Any copper data communications system cabling installed exterior to the building and/or all cabling being routed from the facility to any remote location external to the project location shall be outside rated (OSP), unless specified otherwise. Outside plant cable shall not extend more than fifty (50) feet into a building interior before terminating on surge protection and transitioning to indoor plenum cable.

C. Environmental Conditions:

1. Systems, components, devices materials and equipment shall be capable of withstanding the environmental conditions of the space without mechanical or electrical damage or degradation of operating capabilities or performance.
  - a. Interior, Controlled Environment: System components, installed in temperature-controlled interior environments shall be rated for continuous operation in ambient conditions of 2 to 50 deg C (36 to 122 deg F) dry bulb and 20 to 90 percent relative humidity, non-condensing and shall utilize NEMA 250, Type 1 enclosures.
  - b. Interior, Uncontrolled Environment: System components installed in non-temperature-controlled interior environments shall be rated for continuous operation in ambient conditions of -18 to 50 deg C (0 to 122 deg F) dry bulb and 20 to 90 percent relative humidity, non-condensing and shall utilize NEMA 250, Type 4X enclosures.
  - c. Exterior Environment: System components, conduits and back boxes installed in locations exposed to weather shall be rated for continuous operation in ambient conditions of -34 to 50 deg C (-30 to 122 deg F) dry bulb and 20 to 90 percent relative humidity, condensing. Rated for continuous operation where exposed to rain as specified in NEMA 250, winds up to 137 km/h (85 mph) and snow cover up to 610 mm (24 in) thick shall utilize NEMA 250, Type 4X enclosures.
  - d. Hazardous Environment: System components, conduits and back boxes located in areas where fire or explosion hazards may exist because of flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers shall be rated, listed, and installed according to NFPA 70.
  - e. Corrosive Environment: System components, conduits and back boxes subjected to corrosive fumes, vapors, and wind-driven salt spray in coastal zones, shall utilize NEMA 250, Type 4X enclosures.
  - f. Submersible Environment: System components, conduits and back-boxes subjected to prolonged submersion in water, shall utilize NEMA 250, Type 6P enclosures.
  - g. Areas where equipment and devices may be subject to damage by the general population shall be installed in vandal resistant enclosures; all fire alarm system and related devices shall be provided with wire guards.
  - h. Console: All console equipment shall, unless noted otherwise, be rated for continuous operation under ambient environmental conditions of 15.6 to 29.4 deg C (60 to 85 deg F) and a relative humidity of 20 to 80 percent.

D. Conduits/Raceway/Cable Trays:

1. Provide conduit and raceway systems for all communications networks as indicated below. Refer to all related specification sections for additional conduit and raceway information.
  - a. Accessible suspended ceilings: Provide conduit stub-up from each outlet location to space above ceiling. All conduit stub-up shall include nylon bushing at exposed edge of conduit for protection of all cabling.



- b. Exposed structure: Provide conduit run from each drop to a height of 12 feet to cable tray or J-hooks where provided.
  - c. Vertical Wire runway shall be installed in dedicated conduits and shall be supported any/all risers between floors in closets or accessible locations; in no case shall any cable risers be unsupported.
  - d. Cables entering all communications equipment rooms shall be supported with Cable tray from entrance to rack/cabinet location as indicated on the contract drawings and/or herein specified.
  - e. Wire basket cable tray system shall be provided in all corridors as indicated on the contract drawings and installed as herein specified.
2. All conduits/raceways shall be concealed and shall be installed above accessible finished ceilings and/or in walls. Any conduits/raceways installed in areas requiring installation to be exposed, shall be installed tight to ceilings and at right angles to walls/building lines and shall not obstruct any access hatches, equipment service panels, lighting or other equipment and/or devices. No exposed conduits/raceways shall be installed without prior approval of The Owner and the Design Professional.
- a. Where conduits cannot be concealed above ceilings or in walls and must be installed in finished or occupied areas of the building, all conduits shall be finished wire-mold type raceways or approved equal. Finished wire-mold type raceways shall not be installed without prior approval in writing by The Owner and the Design Professional.
  - b. Where any equipment and/or junction boxes are installed above non-accessible finished ceilings, the contractor shall provide access hatches listed for the intended application. Access hatches shall be located so that service access to the equipment and/or junction boxes is unimpeded.
    - 1) Access hatches shall not obstruct any equipment, service panels, lighting equipment, devices, or any architectural elements of the ceiling. At the time of submittals, the contractor shall submit all proposed access hatch locations for review by the Design Professional.
  - c. All conduits/raceways shall be supported in accordance with NEC requirements and shall be affixed in such a manner that tampering and/or removal without the use of specialized tools shall be prevented.
  - d. All conduits/raceways shall be installed in a manner that prevents tampering or removal when installed in areas exposed to the general population.
    - 1) Provide tamper-resistant installation utilizing "torx with peg" security-fastening devices for all conduits/raceways, equipment, devices, and appurtenances in all areas accessible to the general population and/or areas subjected to tampering or vandalism.
  - e. Interior raceways shall be a minimum of 1-1/4-inch unless otherwise noted. Exterior raceways shall be a minimum 1-1/4-inch. Any sub-grade raceways shall be a minimum 1-1/2-inch. Size all raceways and install conductors in accordance with NEC requirements. Fill ratio shall not exceed 40 percent for indoor or exterior raceways.
    - 1) EMT conduit with compression fittings and/or MC cabling may be utilized in all inaccessible ceiling areas unless otherwise restricted by code.
    - 2) Threaded Rigid metal conduit shall be used on all exterior applications, stub-ups and all interior areas where concealed conduit requirements cannot be met and are exposed to tampering or damage by the general population.
      - a) All areas considered being of high risk due to the nature of the occupancy or the need to protect and maintain the integrity of the cabling shall be installed in rigid threaded conduits.
  - f. Conduits shall be continuous. Conduit runs shall not exceed two (2) 90 degree bends and/or 100 feet without a pull/junction box.



- g. All conduits and pull/junction boxes shall be concealed in walls or ceilings unless otherwise noted.
- h. Conduits shall be connected to pull/junction boxes with set screw connectors and nylon screw on bushings.
- i. Conduit inside bend radius for 2" conduits or less shall be 6 times the internal diameter. Conduit inside bend radius for sizes over 2" shall be 10 times the internal diameter. The use of condulets (lb's) is prohibited.
- j. Pull/junction boxes shall not be used in lieu of a bend.
- k. Firestop all annular space around conduits at through-wall and through-floor penetrations match the rating of the penetrated wall and floor.
- l. Field coordinate installation and exact placement with all trades.
- m. Conduit expansion couplings shall be provided in all areas where expansion/contraction may occur to couple together two sections of a conduit run subject to longitudinal movement. The contractor shall refer to architectural drawings for exact locations of all building expansion joints. Conduit expansion couplings shall be consistent with the size the conduit being installed, shall be steel electrogalvanized, and shall meet all environmental and seismic conditions.
  - 1) Expansion couplings shall be weatherproof and approved for use indoors or outdoors without an external bonding jumper.
  - 2) Expansion couplings shall be UL Listed and approved for use in wet locations.
  - 3) Expansion couplings shall comply with UL 514B, CSA 22.2 No. 18 3-12, NEMA FB1.
- n. Exterior raceways: PVC schedule 40 conduit at the minimum shall be utilized in all underground applications unless otherwise specified by related specification sections. The conduit shall be buried at a minimum 36" below grade. Warning flagging tape shall be buried 12" below grade to indicate the conduit routing location. Refer to related specification sections for additional information.
  - 1) All exterior conduits larger than 2" in diameter shall be provided with dedicated inner-duct conduit systems, segregated by network type (i.e. security, etc.) and shall include a minimum of one spare empty inner-duct per conduit.
  - 2) The Contractor shall have the option to utilize the same trench/routing location as other utilities. In no case shall any system conduits or duct banks be combined with other electrical utilities without providing the required separation between conduits as necessary to ensure the minimal transmission or conduction of any RF and/or EMI signals.
- o. Outlet Boxes: Shall be 5" x 5" x 2-7/8" deep with double gang mounting plate where required for all data outlet locations and single gang reducer plate for wall-mounted telephone locations.
  - 1) All outlet boxes shall be provided with single or dual gang device mud-rings flush to finished wall as required based on type and configuration of outlet and type of wall construction.
  - 2) Use deep masonry boxes at masonry construction. T-Bar hangers or other appropriate mounting hardware shall be utilized to support boxes mounted in the ceiling.
- 3. Cable Trays (Communications Rooms): Provide cable trays in all communications rooms and closets for routing horizontal and vertical distribution and backbone communications cables. All cable trays shall be constructed of aluminum with two side rails and 9" rung spacing. Cable tray shall be complete with all materials, miscellaneous hardware and all appurtenances required for a complete cable distribution and support system.



- a. All cable tray widths shall be sized according to the total number of cables to be supported within the various trays plus an additional 100% spare capacity for future expansion capability. At the minimum all cable trays installed in communications rooms and closets shall be a minimum of 12" wide by 1.25" deep, unless otherwise noted.
- b. Install cable tray in a manner ensuring that all circuits fully comply with all ANSI/TIA standards.
  - 1) Maintain a minimum clearance of 24" between top of cable tray and ceiling structure or other equipment or raceway.
  - 2) Maintain a minimum clearance of 12" between bottom of cable tray and top ceiling grid or other equipment or raceway.
  - 3) Maintain a minimum clearance of 24" from all conduits or cables used for electrical power distribution.
  - 4) Maintain a minimum clearance of 12" between bottom of cable tray and top of equipment racks and/or cabinets.
  - 5) Maintain a minimum clearance of 24" from fluorescent lighting. All Pathways shall cross perpendicular to fluorescent lighting and electrical power cables or conduits.
  - 6) Cable tray supports shall be attached to the structural ceiling or walls with hardware or other installation and support aids specifically designed for the cable tray and designed to support the cable tray's weight and required cable weight and volume.
  - 7) Do not attach cable tray supports to ceiling support system or other mechanical support systems.
  - 8) Load span criteria: Install tray supports in accordance with the load criteria of L/240.
  - 9) Cable Trays shall be supported at 5-foot intervals.
  - 10) All Cable trays shall be installed without burrs, sharp edges, or projections, which may damage cable insulation.
  - 11) All lengths or sections of cable tray shall be bonded and grounded in accordance with NEC, TIA, IEEE.
- c. Follow manufacturers' instructions for installing components and adjusting all equipment and cabling. Submit two (2) copies of such instructions to the Architect before installing any equipment. Provide a copy of such instructions at the equipment during any work on the equipment. Where no instructions are included with the equipment, follow accepted industry practices and workmanlike installation standards.

E. Penetrations of Walls and Floors:

- 1. All wall/floor penetrations are to be sleeved and fire stopped with approved fire stopping material or sealant as applicable for the type of penetration. Coordinate all cable and conduit penetrations of building with all affected trades. Refer to all related specification sections for additional wall/floor penetration requirements.
  - a. All penetrations of rated walls and floors shall be firestopped in accordance with the ASTM and NFPA standards. Refer to related specification sections for additional information.
  - b. Floor penetrations shall be sleeved with a minimum sleeve diameter of 4 inches. An additional penetration shall be provided for future use, sleeved and capped and fire stopped as required.
  - c. Coordinate size of wall penetration with conduit size, number of conductors. Comply with all NEC requirements.
  - d. The fire rating of all penetrated walls, floors, and ceiling structures shall be strictly maintained. All penetrations shall be firestopped and sealed by the Contractor.
  - e. Install firestopping in open penetrations and in the annular space of penetrations for fire-rated barriers.



- f. Installation of firestops shall be performed by an applicator/installer qualified and trained by the manufacturer. Installation shall be performed in strict accordance with manufacturer's detailed installation procedures.
- g. Installation of all firestopping shall be in accordance with fire test reports, fire resistance requirements, acceptable sample installations, manufacturer's recommendations, local fire and building authorities, and applicable codes and shall be installed in a manner acceptable to the authority having jurisdiction.

### **3.6 ELECTRICAL POWER DISTRIBUTION**

- A. Refer to division 26 contract documents for circuiting information.
- B. Refer to specification section 271100 for UPS and PDU material.

### **3.7 TRANSIENT VOLTAGE SUPPRESSION**

- A. Transient Voltage Surge Suppression: All cables and conductors extending beyond building façade, except nonconductive fiber optic cables, which serve as communications, control, or signaling circuits shall be protected against Transient Voltage surges and have Transient Voltage Surge Suppression (TVSS) protection.
  - 1. The TVSS device shall be UL listed in accordance with Standard TIA 497B installed at each end. Lighting and surge suppression shall be a multi-strike variety and include a fault indicator.
  - 2. Protection shall be furnished at the equipment and additional triple solid state surge protectors rated for the application on each wire line circuit shall be installed within 914.4 mm (3 ft) of the building cable entrance. Fuses shall not be acceptable for surge protection applications. All inputs and outputs shall be tested in both normal mode and common mode to verify there is no interference at the minimum surge suppression test shall meet the following criteria.
    - a. All system power supplies serving exterior system components or devices shall be provided with the appropriate transient surge suppression protection on both the line side as well as the load side.
      - 1) A 10-microsecond rise time by 1000 microsecond pulse width waveform with a peak voltage of 1500 volts and a peak current of 60 amperes shall be the minimum performance requirements. Provide surge suppression in accordance with all manufacturers' requirements.
      - 2) An 8-microsecond rise time by 20-microsecond pulse width waveform with a peak voltage of 1000 volts and a peak current of 500 amperes shall be the minimum performance requirements. Provide surge suppression in accordance with all manufacturers' requirements.
      - 3) Maximum series current: 2 AMPS. Provide units manufactured by Advanced Protection Technologies, model # TE/FA 10B or TE/FA 20B or approved equal.
      - 4) Operating Temperature and Humidity: -40 to 85 degrees C (-40 to 185 degrees) shall be the minimum performance requirements. Provide surge suppression in accordance with all manufacturers' requirements.

### **3.8 GROUNDING AND BONDING**

- A. All electronic equipment, conduits, cable trays, racks/cabinets and cable shields shall be properly grounded and bonded in accordance with all requirements of TIA 607-A, NEC 250 and IEEE 1100. Where identified as applicable to the project, all equipment grounding and bonding shall be in accordance with all related specification sections and Motorola R56 Standards and Guidelines for Communications Sites.
  - 1. A Telecommunications Grounding System shall be installed in all communications equipment rooms. Grounding system shall provide equalization of the grounding potentials between the building power system and the telecommunications primary bonding bus-bar (PBB) as well as all telecommunications secondary bonding bus-bars (SBB). Grounding bus-bar shall provide the diversion of electrical transients from the telecommunications



cables and to provide a safety ground for all equipment racks/cabinets, conduits, cable trays and cable shields as well as providing the required coupling to cancel and/or reduce transients.

- a. The PBB and each SBB shall be provided where indicated on the drawings and shall provide an effective bonding connection to the nearest approved building grounding electrode (e.g., structural steel) as well as to the local power distribution panel grounding system (e.g., ac branch circuit panel board's equipment grounding busbar).
  - 1) The minimum bonding shall be #6 AWG copper conductor connected to the PBB and all SBB's. Connections shall be 2-hole NEMA type compression or exothermic welded connections.
2. All grounding connections shall provide the equalization of all grounding potentials between the building power system and the grounding terminations at the communications equipment in order to provide the diversion of electrical transients as well as providing the necessary coupling in order to cancel and/or reduce any voltage transients.
  - a. Equipment Grounding: Metallic structures, equipment racks, cabinets, and enclosures as well as all raceways, cable trays, junction boxes, outlet boxes, machine frames, and other conductive items shall be bonded and grounded.
  - b. Duct Banks and Manholes: Provide an insulated equipment grounding conductor in each duct containing any voltage conductors, sized per NEC except that minimum size shall be No. 2 AWG. Bond the equipment grounding conductors to the grounding bus, to all manhole hardware and ground rods, to the cable shielding grounding provisions for all cable splices, terminations, and equipment enclosures.
  - c. Metallic Fences equipped with communications equipment: Fences shall be grounded with a ground rod at each fixed gate post and at each corner post.
    - 1) Drive ground rods until the top is 300 mm (12 inches) below grade. Attach a No. 4 AWG copper conductor, by exothermic weld to the ground rods and extend underground to the immediate vicinity of fence post. Lace the conductor vertically into 300 mm (12 inches) of fence mesh and fasten by two approved bronze compression fittings, one to bond wire to post and the other to bond wire to fence.
    - 2) Each gate section shall be bonded to its gatepost by a 3 by 25 mm (1/8 by one inch) flexible braided copper strap and ground post clamps. Clamps shall be of the anti- electrolysis type.
3. All connections of grounding conductors to ground rods, bus bars, rebar, structural members, pipes, and fences, as well as splices of any ground conductors, shall be made by exothermic welds except where otherwise noted. All connections to bar lugs shall be exothermic weld or compression type connections. Bolted type connection of ground conductors may only be made where terminal lugs or blocks have been furnished and installed in equipment by the manufacturer.
  - a. Equipment grounding conductors shall be insulated stranded copper, except for sizes No. 10 AWG and smaller shall be solid copper. Insulation color shall be continuous green for all equipment grounding conductors, except that wire sizes No. 4 AWG and larger shall be green, or have permanent green marking at all accessible locations (e.g. not in conduit).
    - 1) At the minimum bonding connection shall be a #6 AWG copper conductor. All grounding shall provide an effective bonding connection between the protected equipment to the nearest approved building grounding electrode (structural steel) as well as to the local power distribution panel grounding system (e.g., ac branch circuit panel board's equipment grounding busbar). All bonding and grounding connections shall be NEMA type compression or exothermic welded connections.



4. Refer to related specification sections for any additional grounding and bonding requirements.

### 3.9 EQUIPMENT IDENTIFICATION

- A. Identify all system controls, components and equipment cabinets using plastic laminate engraved ("limacoid") labels or approved equal. Firmly affix to the panel, device and/or component. Refer to all related specification sections for additional information.
  1. Nameplates shall be laminated black phenolic resin with a white core with engraved lettering, a minimum of 6 mm (1/4 inch) high. Secure nameplates with screws. Nameplates that are furnished by manufacturer as a standard catalog item or where other method of identification is herein specified. Dymo or Kroy tape adhesive-backed lettering shall not be acceptable.
  2. Color-code all junction boxes and enclosures per NEC recommendations. At the minimum provide all communications junction boxes as follows:
    - a. Color for Data/Telecommunications circuits - Yellow.
    - b. Color for Audio/Visual circuits – White
    - c. Letter all pull boxes and junction boxes located in service areas, tunnels, above accessible ceilings, and pipe chases with laminated black phenolic resin with a white core with engraved lettering, a minimum of 6 mm (1/4 inch) high. Secure nameplates with screws.
  3. Permanently label all cabling at both ends with self-adhering plastic labels.
    - a. Labeling: hand-written labels are not acceptable. All labels shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels. The font shall be at least one-eighth inch (1/8") in height, block characters, and legible.
      - 1) The text shall be of a color contrasting with the label such that it may be easily read. If labeling tape is utilized, the width of the tape shall not exceed 3/8," and the font color shall contrast with the background.
      - 2) All data patch panels shall exhibit data drop numbers, in sequential order, for all workstations served by the associated network equipment.
  4. Provide typewritten circuit directories installed in 3-ring binders with transparent page protectors in each control and sub control cabinet and/or equipment rack.

### 3.10 WARRANTY

- A. Warrant material and workmanship for a period as specified in Division 1 of the contract documents and all related specification sections. The warranty period shall commence from the date the Contactor received written notification of final acceptance from the Owner's Representative. At the minimum the contractor shall provide warranty provisions:
  1. Warrant the replacement of defective components/materials and/or correct defective work when given notice by the Owner's Representative during the warranty period.
    - a. At no time is the contractor to use the extra materials provided under the scope of this project to replace malfunctioning or damaged equipment and or components. The Contractor shall replace all malfunctioning or damaged equipment and or components with new. The repair and then reinstallation of malfunctioning or damaged equipment shall not be acceptable.
  2. Warranty excludes liability for consequential incidental, or special damages due to vandalism, misuse, or acts of God.
  3. On-site warranty response time by qualified technician shall be within 8 hours upon receipt of request from Owner.
  4. Warranty repairs shall be provided to the Owner at no cost. This shall include but not limited to replacement of all defective components/materials, all labor charges, all travel costs, and all vehicle charges.
  5. Response time shall be 7 days a week / 24 hours a day / 365 days a Year.



6. Provide test, inspection, and service of each system on a semi-annual basis at six month intervals.
  7. Contractor must provide verification that they maintain their principle base of operation along with the personnel that will be responsible for providing service within 3 hours driving time to the project site. This tenet of the warranty shall remain in effect for the life of the warranty.
  8. All TCP/IP based communications systems cabling, and related appurtenances shall be provided with the manufacturers 25 year extended warranty in addition to all requirements above.
- B. The Contractor shall, as a condition of final payment, execute a written warranty certifying all contract requirements have been completed according to all requirements of the Contract Documents.
1. All system testing, commissioning, demonstration, and training shall be performed prior to final system acceptance. All defects or damages due to faulty materials or workmanship shall be replaced without delay, to the satisfaction of the Owner's Representative, at the Contractor's expense.
    - a. The contractor shall provide written documentation of test results and stating what was done to correct any deficiencies. The first inspection shall occur 90 calendar days after the acceptance date. The last inspection shall occur 30 calendar days prior to the end of the warranty.
    - b. The warranty period shall be extended until the last inspection and associated corrective actions are complete. Where any equipment and/or labor covered by Contractor's or manufacturer's warranty, has been replaced, due to failure, the warranty period for any replaced equipment or restored work shall be reinstated for a period equal to the original warranty period, and commencing with the date of completion of the replacement or restoration work.
  2. In the event any manufacturer customarily provides a warranty period greater than one (1) year, the Contractor's warranty shall be for the same duration for that component.

### **3.11 FIELD SERVICES AND TESTING**

- A. Notify the Owner and the Design professional in writing, prior to the closing of any ceilings and ten (10) days advance of testing all system cabling to prevent delays in construction schedules.
1. Test all cabling to confirm that no grounds, shorts, sneak currents, RFI and EMI conditions exist prior to start-up and commissioning of all, components, devices, equipment and/or systems.
    - a. Before requesting a final inspection, the contractor shall perform a series of end to end installation performance tests. The contractor shall submit for approval by the Project Engineer and Design Professional all test procedures to be employed, test result forms, and timetable for testing all fiber optic and structured copper wiring.
    - b. Acceptance of the simple test procedures discussed below is predicated on the contractor's use of the recommended products including but not limited to, fiber optic cable, category structured cable, cross-connect blocks, patch panels, and outlet devices specified and adherence to the inspection requirements and practices set forth. Acceptance of the completed installation will be evaluated in the context of each of these factors.
- B. Balanced Twisted Pair Cable Testing
1. Minimum Test Parameter requirements for Category horizontal cabling.
    - a. Each wire/pair shall be tested at both ends for the following utilizing Contractor generated test results forms:
      - 1) Wire Map.
      - 2) Length.
      - 3) Insertion Loss.
      - 4) Near-end crosstalk (NEXT) loss.



- 5) Power sum near-end crosstalk (PSNEXT).
  - 6) Equal-level far-end crosstalk (ELFEXT).
  - 7) Power sum equal-level far-end crosstalk (PSELFEXT).
  - 8) Return loss.
  - 9) Propagation delay.
  - 10) Delay Skew.
  - 11) Power Sum ACR.
- b. All balanced twisted pair cable testing described herein shall exceed specified cabling transmission requirements of ANSI/TIA-568-C.
2. When errors are found, the source of each error shall be determined, corrected, and the cable re-tested. All defective components shall be replaced and retested. Defective components not corrected shall be reported to The Owner and the Design professional with explanations of the corrective actions attempted.
  3. Test records shall be maintained using the approved test result forms. The form shall record closet number, riser pair number or outlet ID, outcome of test, indication of errors found (e.g., a, b, c, d, or e) cable length, re-test results after problem resolution and signature of the technician completing the tests.
  4. Test results for each cable must be submitted with identification to match labels on all patch panel ports and 8 position modular jacks, and identification to match as-built drawings associated with that cable.
  5. The Owner and the Design Professional shall observe and verify the accuracy of test results submitted.
  6. Contractor shall submit both hardcopy printouts and electronic copy of all trace test results.
- D. Notify the Owner and the Design Professional in writing, ten (10) days advance of testing of all equipment and/or components to prevent delays in construction schedules.
1. Perform all tests, as required, by authorities having jurisdiction throughout the facility.
  2. Test system for grounds to demonstrate that the ground resistance does not exceed the requirements of the National Electric Codes (NEC).
  3. Test all cabling to confirm that no grounds, shorts, sneak currents, RFI and EMI conditions exist prior to start-up and commissioning of all, components, devices, equipment and/or systems.
  4. Test all systems and components for proper function and operation; certify that all systems are in proper working operation in accordance with the Contract Documents prior to scheduling any system demonstrations.
  5. Testing of all communications systems shall be in the presence of The Owner and the Design Professional (if they so choose) as well as all appropriate representatives of the authorities having jurisdiction.
    - a. All completed communications systems shall be fully tested in accordance with all requirements of TIA. Upon completion of a successful testing, the contractor shall so certify in writing to The Owner and the Design Professional that all testing was completed, certified, and left in first-class operational condition, include all completed copper and fiber testing read-outs, certifications, and test reports.
    - b. The service of a competent, factory-trained engineer or technician authorized by the equipment manufacturer shall be provided to technically supervise installation and participate during initial system programming, start-up, final testing, assist in the final acceptance testing and demonstrations.
  6. Provide all testing, commissioning and certifications as specified by Division 01 and this specification section, as well as any manufacturer's recommendations or requirements.
- E. Tester Criteria
1. General
    - a. Tester shall employ a modular platform with a minimum of a 2.0 Ghz processor.



- b. Tester shall be Level IV/V ETL Verified.
  - c. Tester shall have a current calibration date. If testing will go past calibration date, contractor shall have tester re-calibrated.
  - d. Tester shall be running current firmware.
  - e. Tester will be capable of performing 1,2 & 3 jumper set reference. One jumper is recommended.
  - f. Set reference shall be done with factory provided test reference cords (TRC's)
- 2. Manufacturers:
  - a. Softing WX4500
  - b. Fluke Versiv
  - c. Or equivalent
- 3. The field-test instrument shall be within a 12-month calibration period.
- 4. Certification tester
  - a. Accuracy
    - 1) Level IV/V accuracy in accordance with ANSI/TIA-1152-A
    - 2) Independent verification of accuracy shall be provided.
- 5. Permanent Link Adapters
  - a. RJ45 plug must meet the requirements for NEXT, FEXT and Return Loss in accordance with ANSI/TIA-568-C.2 Annex C
  - b. Contractor shall perform a successful set reference prior to the start of any project.
  - c. Twisted pair Category 5e, 6, 6A, cords are not permitted as their performance degrades with use and can cause false Return Loss failures.
- 6. Results Storage
  - a. Must be capable of storing > 5000 results for all measurements.
- 7. PC Software
  - a. eXport or LinkWare PC
- 8. Reporting:
  - a. Tester shall be capable of exporting raw data files in native format.

### 3.12 TRAINING

- A. In addition to all demonstration and training as specified by Division 01 specification section and all related Division 27 specification sections, system demonstrations and training shall be provided in accordance with all requirements of this section.
  - 1. Prior to acceptance of the work, the System Integrator shall demonstrate to The Owner and the Design Professional, all systems and sub-systems all features and functions of each system and shall instruct The Owner's Representatives in the proper operation, event sequences, programming and maintenance of all systems and sub-systems.
  - 2. The ICTI shall furnish the necessary trained personnel to perform all demonstrations and instructions and arrange to have the manufacturer's representatives present to assist with the demonstrations.
  - 3. Training time shall include, as a minimum, the total time determined by the sum of the times per system as specified in this and related specification sections, for performing the prescribed demonstrations/training. Refer to related specification sections for additional training requirements.
    - a. Allow a minimum of 16 hours' time for each system provided for performing the prescribed demonstrations/training.
  - 4. Provide operation, parts and maintenance manuals defining operation and troubleshooting methods of all systems and review with The Owner's User/Operators as part of training demonstrations.



5. Provide detailed video recordings in high quality digitally formatted media of all demonstration and training of all systems and system operations.
  - a. Utilize remote microphones as may be required to ensure high quality audio of the recorded demonstrations.
  - b. Permanently and professionally label all recorded materials and provide self-sealing plastic cases.

B. Inspections

1. At the completion of the project and prior to final acceptance of the Work, provide evidence of final inspections and approvals to The Owner and the Design Professional, in accordance with all requirements of the Contract Documents as well as required by the authorities having jurisdiction.

**END OF SECTION**



**SECTION 271100**  
**NETWORK COMMUNICATIONS SYSTEMS**

**PART 1 - GENERAL**

**1.1 STIPULATIONS**

- A. Project drawings and general provisions of the Contract, including but not limited to all; General and Supplementary Conditions, Division 01 Specification Sections and all stipulated Specification Sections shall apply to this and all related Division 27 specification sections.
- B. Related Sections:
  - 1. Division 07 – Through-penetration Firestop Systems
  - 2. Division 26 – Common Work Results for Electrical
  - 3. Division 26 – Low Voltage Electrical Power Conductors and Cables
  - 4. Division 26 – Grounding and Bonding for Electrical Systems
  - 5. Division 26 – Hangers and Supports for Electrical Systems
  - 6. Division 26 – Raceways and Boxes for Electrical Systems
  - 7. Division 26 – Identification for Electrical Systems
  - 8. Division 27 – Common Work Elements for Communications Systems
  - 9. Division 27 – Network Communications Systems
  - 10. Division 27 – Audiovisual Systems
- C. Reference Symbols:
  - 1. All device symbols are defined by the appropriate symbol schedules. Because of the scale of the drawings, symbols are shown on drawings as close as possible to the mounting location.
    - a. Contractor shall coordinate exact locations with all architectural drawings, site plans, reflected ceiling plans, furniture plans, mechanical and electrical drawings as well as all affected trades prior to submittal of any shop drawings.
- D. Abbreviations:
  - 1. Refer to Specification Section 270500 for additional information.
- E. Definitions:
  - 1. Refer to Specification Section 270500 for additional information.

**1.2 SUMMARY**

- A. The intent of this specification is to establish a standard of quality, overall system configuration and equipment requirements for the installation of a new structured cabling system and audio/visual equipment in support of a facility TCP/IP network and specified Audio/Visual systems. The contractor shall be responsible for providing all installation, programming, commissioning, testing and certifications as necessary to provide a complete infrastructure to support all TCP/IP telecommunications networks in accordance with the Contract Drawings and/or as herein specified.
- B. All communications network cabling for TCP/IP-based Security systems as specified in Division 28 shall also meet the requirements of this section.
  - 1. The installation, performance, features, functions, software, and programming criteria as specified herein as well as all related specification sections have been designed to offer the maximum system efficiency, ease of operation, occupant safety and the protection of equipment as recommended by the Design Professional.
    - a. Any deviations from the specified criteria shall be documented, reviewed, and agreed to in writing by The Owner and the Design Professional prior to submission of bids. Refer to Division 01, Division 28, and all related Division 27 specification section for product substitutions.



2. It is the responsibility of the contractor to ensure that the installed system meets or exceeds every standard set forth in these specifications. The contractor shall provide all cabling, communications outlets, conduits, system components, termination equipment, racks/cabinets, emergency electrical power, software, programming, and all appurtenances as well as all necessary testing, commissioning and certifications as required to provide a complete and fully operational TCP/IP based network, whether such items are specifically included in this section or not.
- C. The contractor shall furnish all labor, equipment, materials, testing, commissioning, programming, and certification in connection with the installation of a complete premises communications network system as indicated on the drawings and as herein specified.
  1. The systems shall be complete with all equipment as indicated on the contract drawings and/or described herein.
    - a. The systems shall include at the minimum but not limited to the following:
      - 1) Plenum rated cabling.
      - 2) Conduit/Duct/Raceway/Cable Tray Systems
      - 3) Distribution/Termination Patch Panels
      - 4) Equipment Racks/Cabinets
      - 5) Communications Outlets/Jacks
      - 6) Equipment bonding and grounding.
- D. The contractor and all sub-contractors for this work shall have read all the General Conditions, Special Requirements, General Requirements and all applicable related specification sections and in the execution of all work shall be bound by all of the conditions and requirements therein.
- E. Prior to the submission of the Bid, any discrepancies or inconsistencies noted within these specifications and/or the project drawings shall be brought to the immediate attention of The Owner and the Design Professional.
  1. Project specifications and drawings may not deal individually with every component, control, device, or appurtenance, which may be required to produce the specified system configuration, and/or as necessary to meet the equipment and cabling requirements. Coordinate all integration requirements with The Owner and the Design Professional and all appropriate systems providers.
  2. Because of the scale of the drawings, symbols are shown on drawings as close as possible to the mounting location. The contractor shall coordinate the installation of all cabling, materials, equipment, devices, jacks, cable trays and conduits with all affected trades and document all coordination at the time of shop drawing submittals.
- F. This contractor shall assume total responsibility for coordinating all inter-building wiring, any common carrier provided network equipment, and/or The Owner provided equipment as it relates to the operation of these systems.

### **1.3 SCOPE OF WORK**

- A. The contractor shall furnish all labor, equipment, materials, cabling, and the performance of all testing, commissioning, and certification in connection with the installation of a complete premises TCP/IP-based communications network structured cabling system and specified audio/visual systems in accordance with all requirements of the project drawings and/or as herein specified.
  1. Provide and install all equipment described herein, including, but not limited to all, jacks/outlets, Category 6A cabling, fiber optic cabling, coaxial cabling, patch panels, distribution hardware, and patch cables as well as all conduits, outlet boxes and appurtenances necessary to provide complete and fully operating network communications structured cabling system.



2. Provide and install all equipment described herein, including, but not limited to all, video displays, projectors, video signal encoders, audio equipment and video processing equipment.
- B. Communications Systems Design Requirements:
1. Provide a complete operational communications network infrastructure including but not limited to all cabling, jacks, cabling distribution and termination components as indicated on the contract drawings and as herein specified.
    - a. All horizontal network connections shall utilize copper cabling and hardware for distribution to all control equipment as indicated on the contract drawings. All horizontal cabling shall be bundled and routed through the facility on "J" hooks sized to support the network cabling requirements and shall terminate on Category 6A patch panels in the communications rooms.
      - 1) NOTE: Cables shall not be cinched too tightly; cable ties at patch panel locations shall be hook-and-loop (VELCRO) type tie-wraps only. Plastic wire ties shall not be accepted on any cabling.
    - b. All communications cabling shall be terminated at both ends of the permanent link at all equipment locations, fiber optic, coaxial and patch panels.
    - c. The Contractor is responsible for the installation of the entire network communications infrastructure: including all workmanship, standards of quality, adherence to the contract documents, certification testing, as-built documentation, labeling, and final warranty in relationship to the performance and installation of the structured cabling systems in accordance with the contract drawings and/or as herein specified.

#### **1.4 SUBMITTALS**

- A. Refer to Specification Section 270500 for additional information.

#### **1.5 RECORD DOCUMENTS**

- A. Provide Owner with complete set of record drawings in accordance with the requirements of Section 270500.

### **PART 2 - PRODUCTS**

#### **2.1 GENERAL**

- A. Manufacturers listed as acceptable or equal shall not negate the contractor's responsibility for providing all systems in accordance with all functions and performance requirements of the Contract Documents.
- B. Where manufacturer and/or model numbers reference specific system components in this specification, it is to establish the performance requirements and quality of the systems and components only.
1. It is in no way an inference that the referenced model numbers are the manufacturer's current product and are the only acceptable components for this project unless specifically referenced as "no substitutions."
  2. Contractor shall provide the manufacturers' most current product that shall meet and/or exceed the specified performance and features of all data, and telecommunications equipment and/or systems.
  3. Equivalent UL- listed equipment may be substituted for the approved manufacturers in accordance with all requirements of Division 01 specification section titled "Substitutions" and/or General Conditions to the Construction Contract and where approved equal is referenced in the specific specification section.
    - a. All substitutions shall comply with all requirements as specified in related specification sections and all system performance standards shall be maintained.



- b. The contractor shall stipulate at the time of submission of bid the following information impacted by such a substitution.
      - 1) Any and all extensions in time impacted by the substitution.
      - 2) Any changes to the architectural or structural elements to the project.
      - 3) Differences in operation and/or performance from intended system criteria.
    - c. Failure to provide the required substitution information shall result in, without consideration, the immediate rejection of the substituted equipment and/or systems.
  - C. Unless specified otherwise, the equipment furnished shall fall into six classes, and with the exception of Class 6, all of the material within a single class shall be the standard product of one manufacturer. Exceptions are noted as "Class Exempt." The six classes are as follows:
    - 1. CLASS ONE-A (1A): Category-6A and Category-3 UTP, and Category-6A F/UTP copper cables (both horizontal and backbone), Category-6A patch cords, blocking kits, interconnection devices, connectors, wiring blocks, patch panels, and telecommunications outlets. Refer to applicable specification paragraphs for acceptable product manufacturers.
      - a. Note: All material covered in "Class One-A" shall conform to all manufacturers' cable/component matching connectivity requirements for the connection of all communications outlets, patch panels and cabling appurtenances provided as part of this project.
      - b. Other cabling systems meeting the listed performance and warranty requirements will be considered following compliance with all substitution requirements in accordance with Division 1 specification section titled "Substitutions."
    - 2. CLASS TWO: Inner-duct systems. All material covered in "Class Two" shall be equal in quality and performance to that manufactured by Carlon, Eastern Wire+Conduit, Endot or approved equal.
    - 3. CLASS THREE: Equipment racks, Wire Management Systems and Cable Trays. All material covered in "Class Three" shall be equal in quality and performance to that manufactured by Commscope, Eaton (Formerly Cooper) B-Line, Chatsworth Products Inc., or approved equal.
    - 4. CLASS FOUR: Communications Equipment Cabinets and Wire Management Panels. All material covered in "Class Four" shall be manufactured by Commscope, Chatsworth Products Inc. or approved equal.
    - 5. CLASS FIVE: Velcro wire ties/cable wraps, storage rings, labels, "D" rings (metal only), nuts, bolts, screws, and other miscellaneous and hardware.
    - 6. CLASS SIX: Active network systems/Equipment/Hardware
  - D. All equipment and peripheral devices shall be the standard product of a single manufacturer and shall display the manufacturer's name on each component.

## **2.2 COMMUNICATIONS NETWORK EQUIPMENT AND COMPONENTS**

- A. Data Communications Outlets (Category 6A)
  - 1. Data Jacks/Faceplates: 4 pair, ANSI/TIA-568B pinning, Category 6A compliant.
  - 2. Modular Outlet Jacks & Faceplates: Standard 8-position, RJ-45 style, un-keyed, designed for 4-pair, 100 ohm balanced unshielded twisted pair (UTP) cable, 26-22 AWG solid or stranded conductors.
  - 3. Acceptable manufacturers for this project shall be Commscope Uniprise or approved equal.
  - 4. Accessories: Category-6A Jacks include a translucent stuffer cap for wire retention and to permit visual inspection. Jacks shall have attached wiring instruction labels to permit either T568A or T568B wiring configurations.



- a. Modular Mounting Plates:
  - 1) Commscope
  - 2) All mounting plates shall be supplied with mounting screws, clear screw covers and paper labels, and color matched screw covers. White or Beige, matching electrical wall plate – flush mounted with screws. Coordinate final color selection with architect.
  - 3) Plates shall be provided as 1-gang in both 2 and 4 port configurations.
- B. Category 6A Cable – Data Network Communications
  - 1. Category 6A Cable shall be tested to a minimum of 500Mhz, plenum-rated (CMP):
    - a. Commscope: CS44P or approved equal
    - b. Category 6A cable color coding requirements shall be as follows:
      - 1) Data – Blue
      - 2) Voice – White
  - 2. Provide horizontal cabling connecting blocks in sufficient quantities to support all Category 6A cabling terminations as indicated on the contract drawings, plus 25% spare of both brackets and blocks.
    - a. UMS Bracket – Black: Commscope 66572165-40 or approved equal.
    - b. 8 pair Ultim8 Highband Block: Commscope 64685060-08 or approved equal.
    - c. UMS Backboard – Black: Commscope 66522083-19 or approved equal.
    - d. Provide Type 105 hinged label holder: Commscope 60892015-01 or approved equal.
  - 3. Patch Cables to be provided for testing only.

## **PART 3 – EXECUTION**

### **3.1 EQUIPMENT PROTECTION**

- A. Comply with all requirements of Specification Section 270500.
  - 1. Examine all physical and environmental conditions, equipment and device locations, auxiliary system connectivity requirements impacting the installation of all network systems and report any unsatisfactory conditions in writing to The Owner and the Design Professional.

### **3.2 WORK PERFORMANCE**

- A. In addition to all requirements as specified by Specification Section 270500 the network communications systems shall also be provided in accordance with the following requirements:
  - 1. Prior to the final commissioning and/or programming of any network communications components, the Contractor shall conduct a review with The Owner and the Design Professional addressing all network integrations, programming, and related operational connectivity.
    - a. Failure to provide this review and get final sign-off prior to programming shall result in any costs related to changes requested by The Owner and the Design Professional as not being charged to the project.

### **3.3 EQUIPMENT/CABLE INSTALLATION AND REQUIREMENTS**

- A. In addition to all requirements as specified by Specification Section 270500 the network communications systems shall also be provided in accordance with the following requirements:
  - 1. All system cabling shall be of the type, size and specification as required by all contract documents as well as stipulated by all codes and standards as specified by Specification Section 270500.
  - 2. All network communications cabling shall be installed in accordance with the requirements of Specification Section 270500. All network cabling bundles shall not contain any



AC carrying conductors or non-associated network communications cables within the cable raceways/conduits or cable bundles.

- a. In addition, all structured cabling associated with the installation of any network communications system shall comply with all requirements of TIA standards for the proper installation, termination, and testing of all fiber optic and UTP cabling.
- b. Contractor shall provide all equipment, components, devices, hardware, equipment racks\cabinets, patch panels and all appurtenances necessary to provide fully operational network communications systems utilizing a UTP cabling topography. Coordinate all structured cabling with all trades and contractors prior to shop drawing submission.

### **3.4 ELECTRICAL POWER DISTRIBUTION**

- A. Comply with all requirements of Specification Section 270500.
  1. All system power supplies serving system components or devices on the exterior of the facility shall be provided with the appropriate transient surge and suppression protection on both the line side as well as the load side. Refer to specification section 27 05 00 for additional requirements.
  2. Installation of all equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate trade contractors.

### **3.5 TRANSIENT VOLTAGE SUPPRESSION**

- A. Comply with all requirements of Specification Section 270500.

### **3.6 GROUNDING AND BONDING**

- A. Comply with all requirements of Specification Section 270500.

### **3.7 EQUIPMENT IDENTIFICATION**

- A. Comply with all requirements of Specification Section 270500.

### **3.8 MAINTENANCE & SERVICE**

- A. Comply with all requirements of Specification Section 270500.

### **3.9 WARRANTY**

- A. Comply with all requirements of Specification Section 270500
- B. Provide all manufacturer's extended cable warranties based on matching wire to component compatibility requirements. All cable warranties shall be in effect for a period of not less than 20 years.
- C. The warranty must include the following statements regarding the cabling system:
  1. "That all communications networks have been certified and will support and conform to ANSI/TIA-568-C specifications covering any current or future application which supports transmission over a properly constructed and horizontal cabling system premises network which meets the channel and/or basic link performance as described in ANSI/TIA-568-C."
  2. "That all communications networks are free from defects in material or faulty workmanship."

### **3.10 FIELD SERVICES**

- A. Comply with all requirements of Specification Section 270500

### **3.11 TRAINING**

- A. Comply with all requirements of Specification Section 270500.
- B. Documentation:
  1. Contractor shall provide documentation to include all test results and as-built drawings, test results shall be computer generated and shall include all trace reports indicating each pair tested in accordance with all requirements of Specification Section 270500.



- a. One Hard Copy shall also be provided to The Owner and the Design Professional. Software for viewing the test results shall also be provided in the soft copy package.
- C. Final Acceptance
  - 1. Acceptance of all network communications systems, by The Owner shall be based on the results of testing, functionality, and the receipt of documentation. The testing of all UTP cabling, fiber segments and all security and data network cables must meet the criteria established in Specification Sections 270500.
  - 2. The Contractor must demonstrate to The Owner and the Design Professional that 1000 Mbps data signals can be successfully transmitted, bi-directionally, from the communications room terminations to and from a minimum of 10% of individual data drops on each floor. 100% of data drop locations shall be tested. With regard to documentation, all required documentation shall be submitted to The Owner and the Design Professional.
- D. As-Built Documentation:
  - 1. Contractor shall provide clean copies of the technology drawings depicting all as-built conditions for all data drop locations, cable routing and identification, patch panel, data switch port terminations, component layouts and all information as required by Division 01 specification section.

**END OF SECTION**



**SECTION 274100**  
**AUDIOVISUAL SYSTEMS**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Division 1 Specifications, General and Supplemental Requirements apply to this section with additions and modifications specified herein.
- B. Instructions to Bidders, Bidding Forms, Forms of Agreement between Owner and Contractor, Contract Award Date, Starting and Completion Dates, Conditions of the Contract, Insurance Requirements, and other Owner Requirements will be furnished separately by the Owner. These documents, as well as any addenda issued, shall form a part of these Specifications, and this Contractor shall consult them in detail for instructions pertaining to his work.
- C. Each trade contractor shall receive all drawings and specification sections issued as part of the overall bid package. All contractors are to receive, review, and coordinate all of their work as shown or referenced on the other trade documents. All work shown or referenced on the other trade documents shall be included as part of the overall project scope for that particular discipline and trade.
- D. All other Division 27 Specifications.

**1.2 SUMMARY**

- A. These specifications and accompanying drawings are intended to cover the furnishing of all labor, material, and equipment and superintendence of the Audiovisual (AV) Systems.
- B. It is the intent and purpose of this specification and accompanying drawings to cover and include each item, all materials, machinery, apparatus, and labor necessary to properly install, equip, adjust, and put into perfect operation the respective portions of the installations specified and to so interconnect the various items or sections of the work as to form a complete and properly operating whole.
- C. Any equipment, apparatus, machinery, material, and small items not mentioned in detail, and labor not hereinafter specifically mentioned, which may be found necessary to complete or perfect any portion of installation in a substantial manner, and in compliance with the requirements stated, implied, or intended in these specifications shall be furnished without extra cost. This shall include all materials, devices, or methods peculiar to the machinery, equipment, apparatus, or systems furnished and installed as part of the AV Systems work.
- D. Drawings and this Section outline the performance requirements of the AV system. The Drawings are diagrammatic in nature and are meant to convey the performance intent of the system. Contractor shall develop a solution for each portion of the AV system and submit detailed shop drawings and product datasheets to indicate the proposed approach.
- E. The following major system components may be specified under this section:
  - 1. Signal Switching Transport
  - 2. Controllers and Control Interfaces
  - 3. IP encoders, decoders, and network hardware to support AV systems.
  - 4. Signal Processing Systems
  - 5. Signal Recording and Storage
  - 6. Cabling and Connectors
  - 7. Racks and Connection Panels
  - 8. Displays
  - 9. Projectors and Projection Screens
  - 10. Collaboration Systems and Appliances
  - 11. Collaboration and Event Cameras
  - 12. Wireless Presentation System
  - 13. Wired and Wireless microphone system
  - 14. Loudspeakers



### **1.3 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION**

- A. Refer to Audiovisual drawings for equipment noted as furnished but not installed.

### **1.4 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION**

- A. Products installed but not furnished includes all Owner Furnished Equipment (OFE) items which shall be configured and installed as part of a complete and working system as identified in the section summary.
- B. Refer to the 274100 Appendix A – Audiovisual Systems Equipment list for equipment identified as OFE.
- C. All Owner Furnished Equipment, with the exception of Room PCs imaged with Owner's standard user desktop profile, shall be maintained as part of the labor portion of the system warrantee.
  - 1. Contractor shall assist in initial troubleshooting of Owner Furnished Equipment and if necessary, manage the equipment replacement process within the existing manufacturer warrantee period.
- D. New OFE Items
  - 1. Contractor shall take receipt of any new equipment procured by the Owner for this project, including Room PCs, Mini PCs, CATV Tuners, etc. as indicated in the Audiovisual Systems Equipment list.
    - a. If necessary for shop fabrication and testing, Contractor shall take receipt of equipment at Contractor's system staging location and transport the complete AV assemblies to the project site.

### **1.5 WORK NOT INCLUDED IN SCOPE**

- A. Contractor shall coordinate with associated trades providing all work outside of this scope which may be necessary for a complete and working system.
- B. Work not included in scope includes:
  - 1. AV empty conduit, junction boxes, floor boxes, poke-thrus and other pathways for AV low voltage cabling unless otherwise specified in this section.
  - 2. Display in-wall boxes.
  - 3. Power receptacles supporting AV equipment.
  - 4. AV furniture including tables, lecterns, and credenzas.
  - 5. Table hatches or table connectivity enclosures
    - a. Contractor to coordinate and provide all hatch and enclosure faceplates, connectors, and cabling.
  - 6. Architectural or event lighting control interfaces
    - a. Contractor to coordinate and provide all cabling between AV and lighting controllers.
  - 7. Owner network horizontal cabling and ports between an AV device and the Owner's IDF/MDF/Network rack.
    - a. Contractor to coordinate and provide all patch cabling between Owner network drop termination points and AV devices including.
      - 1) Includes patch cabling run in glass front extrusions for use with room scheduling devices.
    - b. Contractor to coordinate and provide all network drops between AV devices or between an AV device and contractor provided network switch.

### **1.6 PRICE PROCEDURES**

- A. Unit Pricing
  - 1. Contractor shall provide unit and system pricing as part of their bid submission and maintain unit pricing throughout the contract term.



## **1.7 LAWS, REGULATIONS AND CODES:**

- A. Perform all work in strict compliance with all laws, regulations, and/or codes applying, including all Federal, State, and local codes and any other authority having jurisdiction. Wherever drawings or specifications conflict with such regulations they shall be made to conform, and approval of the Design Professional obtained on such changes as may be involved.
- B. All electrical and telecommunications work shall comply with the requirements of the National Electrical Code, latest accepted revision.

## **1.8 PERMITS, FEES, AND CERTIFICATES OF APPROVAL:**

- A. Unless stated otherwise in General Conditions or Division 1, obtain, and pay for all permits, fees, and licenses required, including those of utilities and Agencies. Provide copies to Design Professional in the quantity requested. "Fees" shall include connection charges construction costs, and other such charges by utility companies or service providers. Ascertain such charges during bidding period and include bid price.

## **1.9 REFERENCES**

- A. The publications list below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
- B. Specific reference in specifications to codes, rules, regulations, standards, manufacturer's instructions, or requirements of regulatory agencies shall mean the latest printed edition of each in effect at the date of contract unless the document is shown dated.
- C. Conflicts:
  - 1. Between referenced requirements: Comply with the one establishing the more stringent requirements.
  - 2. Between referenced requirements and contract documents: Comply with the one establishing the more stringent requirements.
- D. References:
  - 1. General: The system shall comply with all applicable codes, ordinances and standards as interpreted and enforced by the local authority having jurisdiction.
  - 2. Avixa (Audiovisual and Integrated Experience Association, previously InfoComm) standards including:
    - a. Display Image Size for 2D Content in Audiovisual Systems
    - b. Cable Labeling for Audiovisual Systems
    - c. Audio Coverage Uniformity in Listener Areas
    - d. Standard Guide for Audiovisual Systems Design and Coordination Processes
    - e. Projected Image System Contrast Ratio
    - f. Audiovisual Systems Energy Management
    - g. AV Systems Performance Verification
    - h. Audio, Video and Control Architectural Drawing Symbols Standard
    - i. Electronic Symbol Files - Audio, Video and Control Architectural Drawing Symbols
  - 3. American Society for Testing and Materials (ASTM)
  - 4. ANSI standards including:
    - a. ANSI/TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements
    - b. ANSI/TIA/EIA-568-B.3 Commercial Building Telecommunications Cabling Standard, Part 3: Optical Fiber Cabling Components Standard
    - c. ANSI/TIA/EIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces
    - d. ANSI/TIA/EIA-606-A The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
    - e. J-STD-607-A Commercial Building Grounding and Bonding Requirements for Telecommunications



- f. ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant
- g. ANSI/TIA/EIA-526-14A Measurement of Optical Power Loss of Installed Multimode Fiber Cable Plant
- 5. BICSI -- Telecommunications Distribution Methods Manual
- 6. BICSI -- Cabling Installation Manual
- 7. Underwriters Laboratories Listed, UL Certified
- 8. National Electrical Code Articles 770 and 800.
- 9. NFPA 780 - 2005 or newer.
- 10. RUS Standards (formerly REA)
- 11. Local State Uniform Fire Prevention and Building Code.
- 12. Local State Department of Labor Rules and Regulations
- 13. Local State Department of Health
- 14. Code of Federal Regulations (CFR) [Telecommunications] Title 47 Part 90
- 15. Code of Federal Regulations (CFR) [Telecommunications] Title 47 Part 15

## **1.10 DEFINITIONS**

- A. The term "Furnish" shall mean to obtain and supply to the job site. The term "Install" shall generally mean to fix in position and connect for use. Where language indicates that one party or trade is to "install", and another is to "connect", the term "install" shall mean only to fix in position, and "connect" shall mean to make electrical connections. The term "Provide" shall mean to furnish and install.
- B. ANSI – American National Standards Institute
- C. AV – Audio / Visual, audiovisual, audio visual
- D. Avixa - Audiovisual and Integrated Experience Association, formerly InfoComm
- E. HTML – HyperText Markup Language
- F. IP – Internet Protocol
- G. ISO – International Organization for Standardization
- H. NEC – National Electrical Code
- I. NEMA – National Electrical Manufacturing Association
- J. SNMP – Simple Network Management Protocol
- K. TCP – Transmission Control Protocol
- L. TIA – Telecommunications Industry Association
- M. UL – Underwriters Laboratories
- N. VLAN – Virtual Local Area Network
- O. VoIP – Voice over Internet Protocol
- P. VPN – Virtual Private Network

## **1.11 RECORD DRAWINGS:**

- A. During construction keep an accurate record of all deviations of the work as shown on the drawings and that which is actually installed.
- B. Secure from the Design Professional a complete set of prints of the AV drawings and note changes thereon. Make a complete record in a neat and accurate manner, of all changes and revisions to original design which exist in completed work, in the file format originally received.
- C. The cost of furnishing above drawing files and preparing these record drawings shall be borne by the Contractor. When all revisions showing the work as finally installed are made, the corrected prints and drawings files shall be submitted for review and approval by the Design Professional.



- D. Record drawings shall be delivered to Owner within 30 days after acceptance of completed project by Owner.

#### **1.12 OPERATING INSTRUCTIONS:**

- A. Provide to the Owner three bound copies of complete written instruction on the operation, care and maintenance of each piece of equipment and the installation as a whole. Include frequency of inspection, cleaning and adjusting and other attention as may be required in accordance with manufacturer's instructions. Material shall be manufacturer's brochures, catalog cuts, parts lists, wiring diagrams, etc. Also supply Owner with three complete sets of approved shop drawings.
- B. Furnish qualified personnel to instruct the Owner's personnel in the maintenance and operation of all equipment and systems. Instructing personnel shall remain on the job continuously during working hours until such instruction is complete, but not less than 16 hours.

#### **1.13 PERFORMANCE REQUIREMENTS**

- A. Provide a complete, fully functional installation of the AV System and associated components including:
  - 1. Engineering and installation services aligning to the published project schedule.
  - 2. Coordination with the Owner, Architect, Design Professionals, General Contractor and all associated trades.
  - 3. Creation, submission, and revision to the point of receiving approval of an AV Systems Submittals package.
  - 4. Equipment procurement.
  - 5. Equipment delivery to the site and removal of all trash.
  - 6. Provide all installation tools and materials necessary to complete all equipment installation tasks including ladders, scaffolding and lifts.
  - 7. Equipment installation.
  - 8. Systems setup, configuration, and commissioning.
  - 9. Systems demonstration to Owner and Design Professional.
  - 10. Remediation of any systems identified by Owner and Design Professional as not meeting published equipment specifications or the requirements as set out in this scope of work.
  - 11. As-built documentation.
  - 12. End User Training.
  - 13. AV Systems Warranty.
- B. Provide all equipment accessories, manuals, mounting hardware, remotes and other ancillary pieces furnished by the manufacturer but not required for installation.
- C. Provide all AV low-voltage cabling, connectors, connector plates, patch bays and patch cables.
  - 1. Confirm cable types and verify required length of all installed and portable premanufactured cables and assemblies prior to order.
- D. Terminate and test all AV low-voltage field connections.
  - 1. Provide all connectorized plates, connectors, cable labels and plate labels.
  - 2. Confirm finish of all plates and labels with Design Professionals.
- E. Install and configure Owner Furnished Equipment.
- F. Confirm color selection of all exposed AV equipment with Owner prior to order.
- G. Confirm required openings, recesses, and mounting locations of all AV equipment to meet manufacturer requirements. Verify onsite prior to completion of wall framing and electrical rough-in.
- H. Contractor to include manufacturer onsite oversight labor including commissioning services and end user training for any systems which Contractor does not have staff with relevant manufacturer training and any available manufacturer certifications.
- I. Provision all video conferencing, wireless presentation and other collaboration hardware endpoints with Owner's network and collaboration system registration information.



- J. Coordinate AV equipment blocking requirements with the General Contractor prior to installing AV equipment.
  - 1. All wall or ceiling mounted equipment to be provided with hardware sized for a 5:1 safe working load limit.
  - 2. All ceiling mounted equipment to be provided with a safety cable or redundant support system attached to building structure and sized for the equipment by the equipment manufacturer.
- K. Install all AV rack hardware including rack bases and wall supports.
  - 1. Confirm that all AV rack locations will allow proper clearances.
  - 2. Coordinate with the General Contractor location of all AV rack power receptacles, data jacks, CATV jacks and empty AV low voltage junction boxes.
  - 3. Confirm sufficient heat exhaust and cooling systems have been provided to meet systems demand loads.
  - 4. Request of the General Contractor a normally-closed fire alarm mute contact for all event systems as identified in the Audiovisual Drawings.
  - 5. Provide rack hardware, cable management hardware and rack accessories as necessary to meet rack and equipment manufacturer recommended configurations.
- L. Provide all necessary copper and fiber patch cables for making all device interconnections. Patch cable type and color shall be coordinated with the structured cabling package to match project standards.
- M. Provide an AV equipment network coordination submittal for Owner completion. Configure all AV equipment with the confirmed network settings and test operation on the Owner network.
- N. Loudspeakers
  - 1. Coordinate location of all wall and ceiling speaker systems including location of low voltage and power infrastructure.
  - 2. Review all ceiling speaker mounting conditions and provide ceiling speakers with a tile bridge or other relevant manufacturer support system.
  - 3. Where indicated in the specification, paint all exposed speaker grills with a custom color as confirmed by Owner.
- O. Furniture
  - 1. Coordinate with furniture providers all AV equipment installation requirements including cutout sizes, connector/plate openings, wiring openings, raceways, methods of affixing cables and equipment.
    - a. All equipment and cabling shall be installed in a neat and professional manner with the intention of limiting visibility of supporting hardware and cabling.
    - b. All table cabling shall be secured to the table or hidden in a plinth, cloth wrap or articulating cable manager.
  - 2. For all technical furniture provided under this scope of work, coordinate equipment layouts, and finishes with Owner and Design Professional prior to ordering.
- P. Wireless Systems
  - 1. Coordinate wireless frequency selection based on a site survey and relevant government agency requirements. Address any wireless channel conflicts prior to equipment ordering.
    - a. For meeting or event space wireless microphone and in-ear monitor systems, provide the Owner with a system capable of adjusting wireless frequency as necessary to maintain reliable system operation in the installed environment.
  - 2. Coordinate placement of wireless antennas and provide antenna splitting, combining and amplification as necessary to operate within manufacturer required signal strength ranges.
- Q. Control Systems



1. Coordinate with the General Contractor the location of all external system interfaces including lighting, shades, occupancy, BMS as required.
  - a. Provide cabling between AV controllers and external system interfaces.
2. Provide custom AV control system code development as necessary to operate all AV equipment user controls per specification.
  - a. Manage a control interface confirmation process with Owner and Design Professional as outlined in the AV submittal requirements.
3. Configure all digital signal processors, content management systems, scheduling systems and other processor-based platforms to optimize to the spaces and systems being served.

#### **1.14 QUALITY ASSURANCE**

- A. Comply with the requirements of the following codes and/or standards:
  1. ANSI.
  2. ANSI.
  3. UL.
  4. NEMA.
  5. NFPA.
  6. NEC.
  7. IBC 2009.
  8. BICSI.
  9. ANSI/TIA 568-D Series.
  10. ANSI/TIA 569-E.
  11. ANSI/TIA 606-C.
  12. ANSI/TIA 607-D.
- B. All packaged equipment shall be independently Third Party labeled as a system for its intended use by a Nationally Recognized Testing Laboratory (NRTL) in accordance with the OSHA Federal Regulations 29CFR1910.303 and .399, as well as NFPA Pamphlet #70 and National Electric Code (NEC), Article 90-7.
- C. The contractor shall be certified by the manufacturer of the products, adhere to the engineering, installation and testing procedures, and utilize the authorized manufacturer components and distribution channels in provisioning this Project.
- D. All members of the installation team shall be certified by the manufacturer as having completed the necessary training to complete their part of the installation. Resumes of the entire team shall be provided along with documentation of completed training courses. Submit resume and copy of technician's license including:
  1. A Technical resume of the Contractor's Project Manager and Field Supervisor documenting a minimum of five (5) years of experience installing similar size projects.
  2. Matching documentation for any Sub-Contractor who will assist the Contractor in performance of this work.
- E. All hardware, software, firmware, and/or operating system requirements given are the minimum requirements. The Contractor's product shall meet or exceed these requirements. The product selected shall meet the operational, functional, and performance requirements specified herein. Additionally, due to the rapid advancement and antiquation of technology related products, the supplied product shall be the "contemporary technical equivalent" of that specified. "Contemporary technical equivalent" shall be based on a comparison of technology at the time of publication of specification to the technology at the time of the first product submittal. Final product approval is at the sole discretion of the Owner.
- F. Manufacturer: Where Contractor has the ability to select a preferred manufacturer for items not specifically covered in the Appendix A Audiovisual Systems Equipment list, the manufacturing company selected shall have a minimum of five years of experience in producing the products.



## 1.15 SUBMITTALS

- A. Contractor must receive approval from the Owner or Design Professional of a submittal before procuring equipment or performing services related to the submittal.
- B. All submittals shall be provided in electronic format.
  - 1. Provide one full size paper submittal if requested by Owner.
  - 2. Confirmation of the submittal schedule and submission format must be obtained by Owner prior to creating individual submissions.
- C. Revised submittals shall include clouding or other method to indicate revisions since the prior submission.
- D. Project Status Report
  - 1. A project status report shall be sent to the Owner and Design Professional weekly starting within two weeks of award. The project status report shall be used as the basis for Contractor coordination meetings and shall include:
    - a. Team member contact information
    - b. Project overall schedule
      - 1) Highlight changes to the schedule since last issuance.
      - 2) Identify critical schedule items.
      - 3) Identify opportunities to improve on the current schedule.
    - c. Action items from prior coordination meeting and status of each item
    - d. Installation schedule and status for each unique space or system in the project.
    - e. Outstanding Owner coordination items.
    - f. Outstanding Design Professional coordination items.
    - g. Change Order Status
    - h. Submittal Approval Status
- E. Within five business days of award, submit an installation schedule including major milestone dates for construction phasing based on overall project construction schedule (along with separate phases where applicable), system and device configuration, testing and training. Include the following milestones:
  - 1. Separate milestones for each submittal.
  - 2. Signage content and system configuration coordination session.
  - 3. Required date for receipt of all OFE equipment per project phase or equipment type.
  - 4. Required data for receipt of any Owner furnished signage content.
  - 5. AV project manager onsite.
  - 6. Delivery of all Furnished but not Installed equipment to site.
  - 7. Cable pulls start and complete.
  - 8. Mount and speaker installation start and complete
  - 9. Equipment installation start and complete
  - 10. Systems configuration and testing start and complete.
  - 11. Systems ready for checkout and punch list
  - 12. Owner training
  - 13. As-built submission
- F. Within 30 business days of award submit an AV infrastructure review memo confirming infrastructure shown on the AV, Architectural, Telecom, Mechanical and Electrical design packages meets AV equipment installation requirements or identifying specific adjustments necessary to support the specified AV equipment.
  - 1. Verify AV conduit sizing and pathways.
  - 2. Verify architectural recesses and ADA clearances.
  - 3. Verify data drops to support AV network connectivity.
  - 4. Verify AV power receptacles and multi-discipline shared services device requirements (in-wall boxes, floor boxes, poke-thrus.
  - 5. Verify AV enclosure cooling/exhaust.



6. Verify ceiling device layouts and clearances, projector, and projection screen orientation.
- G. Qualifications: The Contractor shall submit qualification data sheets for firms and persons as specified in the "Quality Assurance: section of this specification to demonstrate their capabilities and experience.
- H. Submit proposed product data sheets: The Contractor shall submit catalogue cut-sheets that include manufacturer, trade name, and complete model number for each product specified or selected for use in the project.
  1. Model number shall be highlighted to indicate exact selection per system type.
  2. Product data sheets shall be organized with separate folders per system type with a master equipment list broken into three sections:
    - a. System types and quantities of systems
    - b. Equipment and equipment quantities per system type
    - c. Master project equipment list and quantities
  3. Confirm manufacturer master quote numbers and the accuracy of the master quotes against the specified equipment.
- I. Submit shop drawings detailing proposed system architecture and interconnectivity.
  1. All shop drawings sheets shall be sized to match the project architects drawing format.
  2. Shop drawings shall include the following drawing information.
    - a. Scaled floorplans indicating the area of work and room types.
    - b. Enlarged plans indicating equipment locations, mounting requirements, clearances, infrastructure requirements, and cable routing.
      - 1) Provide projector and projection screen throw distance calculations.
      - 2) Provide display elevations and sections.
      - 3) Identify any details which do not meet minimum ADA clearance requirements.
      - 4) Identify equipment centerline coordinated with furniture and main display wall.
    - c. Device details indicating mounting requirements for each unique equipment type in the project.
      - 1) All overhead equipment details must identify the safe working load and manufacturer provided safety hardware. Where a custom mounting detail is required using fabricated components or components provided by multiple manufacturers a structural detail, reviewed and stamped by a Structural Engineer license in the project state, must be provided.
      - 2) Copies of manufacturer cut sheet details shall not be considered sufficiently coordinated.
    - d. Rack elevations and mounting details with clearances and infrastructure requirements
    - e. System flow diagrams with cable labels and corresponding cable schedule indicating wiring interconnections between all AV devices and Owner's network.
    - f. Wiring termination details.
      - 1) Include cable labelling standards and materials.
    - g. Panel details showing all prefabricated and custom connector panels, connector types, labels and required backbox.
    - h. Technical Furniture details indicating the location, required openings and cable management of all AV equipment in furniture and millwork regardless of what scope the furniture is provided under.
- J. Control Systems



1. Owner or Design Professional approval of all Control Systems submittals is required prior to installation. Failure to secure approval shall not be grounds for project schedule delay or Contractor change order.
2. Submit button panel layouts with labelling/engraving and sequence of operations.
3. Submit audio DSP configuration files.
4. Submit an initial and up to two revised set of touch panel user interface submittals.
  - a. Contractor shall lead a user interface review session with Owner and Design Professional prior to start of touch panel user interface design. Contractor shall provide up to three design samples in advance of the user interface session for Owner and Design Professional review.
  - b. User interface layouts shall follow the best practices laid out in the InfoComm *Dashboard for Controls*
  - c. The overall user interface design process shall reflect the current draft Avixa UX 701.01 *User Experience Design for AV* recommendations.
  - d. User interfaces shall include the following basic features:
    - 1) Control of all local AV equipment addressable parameters required during the specified use cases.
    - 2) Call controls, transport controls, source selection, volume controls as appropriate.
    - 3) Standard controls formatted to match industry standard applications (knobs, sliders, buttons, interactive menus, etc.)
    - 4) A password protected advanced section allowing for control of individual device parameters (power, channel level controls, input selection, etc.)
    - 5) Utilize stock manufacturer pages and capabilities where possible. Custom scripting shall be avoided unless where required as part of this specification.

K. Network Coordination Submittal

1. Submit a detailed list of all network enabled AV devices detailing:
  - a. MAC address
  - b. IP Address (for Owner to complete)
  - c. Subnet (for Owner to complete)
  - d. Wired and Wireless VLANs
  - e. DHCP requirement
  - f. Unique network requirements including firewall exceptions, port forwarding and Qos
2. Lead an AV network coordination session with the Owner and Design Professional to confirm overall project AV network requirements and set a schedule for completion and return of the Network Coordination Submittal by the Owner.

L. Owner Training Plan

1. Identify specific systems to be trained on and training durations.
2. Identify required project stakeholders.
3. Identify training status and provide training sign-off sheets.
4. Provide training materials and user one-page operations sheets for each system types.

M. Operations and Maintenance Manuals:

1. This Section requires complete documentation of the AV System for the purpose of system operation and maintenance during and after the Warranty period. It is intended that the operation and maintenance manuals be exhaustive in the coverage of the system to the extent that they may be used as the sole guide to the troubleshooting, identification, and repair of defective parts. All documentation, as described here-in shall be submitted to the Owner for approval sixty (60) days prior to final submission.
2. Scope: These manuals shall include basic wiring diagrams, schematics, and functional details such that any component, wire, or piece of equipment in the system may be easily



identified by going to the actual equipment and making reference to this manual. It is required that everything in the system be neatly labeled and easily identifiable. Every terminal, wire, component, or piece of equipment, and other such items shall have a number or letter designation. All of these identification characteristics shall be included in the maintenance and operation manuals.

3. The maintenance manual requirement of this Section is in addition to Shop Drawing requirements. Maintenance manuals and Drawing sets shall be compiled after system fabrication and testing and shall incorporate any changes made after Shop Drawing submittal. The maintenance manuals and drawing books shall be permanently bound in hard plastic covers.
4. Maintenance Manuals, Manufacturer's Literature: Provide manufacturer's standard literature, covering all equipment included in the system. The maintenance manuals shall contain specifications, adjustment procedures, circuit schematics, component location diagrams, and replacement parts identification. All references to equipment not supplied on this Project shall be crossed out.
5. System Administrator Documentation: This documentation shall provide complete information on the configuration, business rules, operation, maintenance, and troubleshooting of the system.

N. Testing Plan

1. Submit a systems testing and verification plan for approval by Owner and Design Professional.
2. The approved Testing Plan shall be completed and provided to the Owner and Design Professional prior to commencement of Owner testing and punch list efforts.

O. As-Built Documentation

1. Submit an updated version of all submittals revised to match installed conditions.
2. Submit the native version of all drawing, control programming, digital signal processing and other systems configuration files.

P. Warranty

1. Within 30 business days of award, provide a summary of the systems warrantee including all optional services for final Owner confirmation.
2. At time of as-built documentation submission provide two physical copies of the hardware and software warranty certifying that the final as-built installation is fully warranted by the manufacturer.

## **1.16 GENERAL WARRANTY**

- A. The system warranty shall commence on the date of Substantial Completion unless otherwise provided for in the Contract.
- B. The system warranty shall be for an initial period of one year.
- C. Hardware Warranty:
  1. Contractor shall warrant that all components meet or exceed the specifications provided in the product data submittal.
  2. The Contractor shall warrant that the proposed merchandise will conform to its description and any applicable specifications and shall be of good quality for the known purpose for which it is intended.
  3. The warranty shall cover material and labor for the replacement or repair of defective products.
  4. Regardless of manufacturer warranties expiring before the full system warranty period, Contractor shall be responsible for extending any manufacturer warranties for the full length of the system warranty.
- D. Software Warranty:



1. The warranty shall allow for replacement or repair at the discretion of the Owner. All software necessary to compile, modify, and maintain software developed for this specification shall be included in this warranty.
2. The warranties shall include the price of all software upgrades during the warranty period. If a new version of the system software becomes available during the warranty period, it shall be upgraded as part of the warranty.

### **1.17 MAINTENANCE AND SUPPORT SERVICES**

- A. Description of Work: During the warranty period provide customer service for subscriber issues Monday – Friday, 8am – 5pm local time. Provide quarterly system inspections, checks and updates during the warranty and maintenance period.
- B. Personnel: Service personnel shall be certified in the maintenance and repair of similar types of equipment and qualified to accomplish work promptly and satisfactorily. Service personnel shall hold a valid Airport security credential. The Owner or Owner's Designated Representative shall be advised in writing of the name of the designated service representative, and of any change in personnel.
- C. Schedule of Work: The Contractor shall perform quarterly inspections of the installed system. Inspections shall be in accordance with manufacturer and Contractor recommendations. The adjustment and repair of the system shall include visual checks of installed equipment and inspection of system health logs and software. Recommended software updates shall be applied on the system at these pre-defined quarterly periods.
- D. Scheduled Work: Scheduled work shall be performed during regular working hours, Monday through Friday, excluding holidays.
- E. Emergency Service: The Owner will initiate service calls when the system is not functioning properly. Qualified personnel shall be available to provide service to the complete system repair. The Owner shall be furnished with a telephone number where the service supervisor can be reached at all times. Service personnel shall be at site within 4 hours after receiving a request for service. The system shall be restored to proper operating condition within 8 hours after service personnel arrive onsite.
- F. Records and Logs: The Contractor shall keep records and logs of each task, and shall organize cumulative records for each component, and for the complete system chronologically. A continuous log shall be maintained for all devices. The log shall contain all initial settings. Complete logs shall be kept and shall be available for inspection on site, demonstrating that planned and systematic adjustments and repairs have been accomplished for the system.
- G. Work Requests: The Contractor shall separately record each service call request, as received. The form shall include the serial number identifying the component involved, its location, date and time the call was received, specific nature of trouble, names of service personnel assigned to the task, instructions describing what has to be done, the amount and nature of the material to be used, the time and date work started, and the time and date of completion. The Contractor shall deliver a record of the work performed within 5 days after work is accomplished.
- H. System Modifications: The Contractor shall make any recommendations for system modification in writing to the Owner. System modifications shall not be made without prior approval of the Owner. Any modifications made to the system shall be incorporated into the operation and maintenance manuals, and other documentation affected.

### **1.18 SERVICE LEVEL AGREEMENT (SLA)**

- A. The Contractor shall provide with the bid a firm fixed pricing option(s) to provide continued warranty service and maintenance of the system for additional years two and three. The SLA shall mirror that of the warranty and maintenance requirements during the warranty period as outlined in the Warranty and Maintenance articles above.



### **1.19 DELIVERY, STORAGE, AND HANDLING**

- A. Contractor shall coordinate secure storage onsite with the General Contractor and is responsible for the safe delivery, storage and handling of all equipment covered in this scope of work through substantial completion of the work.

### **1.20 PROJECT CONDITIONS**

- A. Environmental Limitations: System components shall be equipped and rated for the environments where installed.
- B. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:
- C. Interior, Controlled Environment: System components shall be rated for continuous operation in ambient conditions of 2 to 40 deg C dry bulb and 20 to 90 percent relative humidity, noncondensing.
- D. Interior, Uncontrolled Environment: System components installed in non-air-conditioned interior environments shall be rated for continuous operation in ambient conditions of 0 to 122 deg F (minus 18 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, noncondensing.
- E. Verify that field measurements are as shown on Drawings; no media, fiber, or copper, shall be installed in lengths surpassing Standards based length requirements.
- F. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project conditions.
- G. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required. Record actual routing on as-builts for all conduit larger than one inch.

### **1.21 PROJECT COORDINATION**

- A. Determine required separation between cable and other work.
- B. Coordinate cable routing to avoid interference with other work disciplines.
- C. Coordinate grounding and bonding with Section 270527 Contractor.
- D. Coordinate use of fiber optic cabling infrastructure with Section 271310 Contractor.
- E. Coordinate network configuration requirements with Section 272000 Contractor.

## **PART 2 - PRODUCTS**

### **2.1 APPENDIX A – AUDIOVISUAL SYSTEMS EQUIPMENT LIST**

- A. Refer to the attached 27 41 00 Appendix A - Audiovisual Systems Equipment List for product information and manufacturer quotes.
- B. The Appendix A shall be used as the basis for Contractor pricing. A native excel version of the appendix shall be filled out by the Contractor and returned with the bid response.
- C. Contractor shall verify any existing manufacturer quotes, including those listed in the Appendix A, match the project requirements.
  - 1. Contractor shall be responsible for addressing any discrepancies between manufacturer quotes and project requirements.

### **2.2 SUBSTITUTIONS**

- A. Any proposed alternate equipment choices should be requested in writing by the contractor prior to the proposal submission for approval. Each item on the alternate equipment list must be accompanied by catalog cut sheets and technical specifications.
- B. Any and all submissions of alternate equipment will be the financial responsibility of the company that submitted. This includes but is not limited to laboratory testing, equipment demonstrations, etc. The Owner shall not incur any costs in these tests. No substitution shall be allowed without written approval of the Owner or Design Professional.



## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. Contractor shall install all system components including furnished equipment, and appurtenances in accordance with the manufacturer's instructions, and shall furnish all cables, connectors, terminators, interconnections, services, and adjustments required for a complete and operable system.
- B. Grounding shall be installed as necessary to preclude ground loops, noise, and surges from adversely affecting system operation.
- C. Contractor shall adhere to the following during installation of the system:
  - 1. Underwriters Laboratories (UL) listing for restricted access installations in business and customer premises applications. This listing is required by the National Electric Code for customer premise installations.
  - 2. Fire resistance requirements specified by Underwriters Laboratories in UL 1459, 2nd edition.
- D. Where undefined by codes and standards, Contractor shall apply a safe working load of at least five (5) times the rated load to all fastenings and supports of system components.
- E. The Contractor shall adhere to the installation schedule of the General Contractor and should attend all construction meetings scheduled by the General Contractor.
- F. Contractor shall place materials only in those locations that have been previously approved. Any other locations shall be approved, in writing, by the Owner.
- G. All wiring and cables shall be properly dressed and/or bundled with Velcro straps. Twisted wire, tape, rope, twine, phone wire and similar bits of debris usually available on site are not acceptable substitutes for proper securing hardware. All inter-rack cables and wiring must be properly routed, and where available, run in cable trays. Overhead cables must be easily removed or reworked within the cable trays. Proper care must be taken to ensure that new cables added to the trays are not stressed or intertwined with existing cables. Overhead cables may not cross perpendiculars or be suspended in mid-air without supports. No supports may be installed without prior approval from the Owner. All long cable runs must be properly identified at each end and every 100 feet indicating the carried frequency and communication room of origin. All cabling within the building must be cut to proper length.
- H. The Contractor shall obtain written permission from the Owner before proceeding with any work which requires cutting into or through any part of the building structures such as, but not limited to, girders, beams, concrete, carpeted or tiled floors, partitions or ceilings. The Contractor shall also consult with the General Contractor before cutting into or through any part of the building structures where fireproofing or moisture proofing could be impaired.

### **3.2 INSTALLATION**

- A. System equipment shall not be installed until the environment is free of dust. A dust-free environment shall be considered one in which all construction work has been completed and the air handling system for the area has been operated continuously for at least two weeks with a filter change after one week. During and following installation of the system equipment, relay assemblies and equipment cabinets, the air handling system shall be kept operational continuously and shall be adjusted to maintain a positive pressure relative to building spaces outside the areas of installation. Openings into the installation spaces shall be kept closed, filters shall be changed at frequent intervals, equipment enclosures shall be kept closed, covers shall be installed and any other provisions for keeping the equipment, assemblies, and cabinets clean and free of dust and deliver shall be employed.
- B. Verify exact location and sizes of all conduit runs and back boxes prior to rough-in.
- C. All switches, connectors, outlets, etc. shall be clearly, logically, and permanently labeled during installation.



- D. All items of equipment related to the AV system shall be installed in the designated positions as defined on the drawings.
- E. All wiring terminations shall be trimmed to the required length for proper system operation and neatly dressed. No excess wire loops shall remain in the final system unless required for maintenance access. Each system wire and cable shall be clearly marked at each end.
- F. All audio and video interconnections shall use the highest quality signal path available.

### **3.3 WIRING**

- A. Wiring within equipment enclosures shall be neatly grouped or tied or run in plastic snapcover wireway sections. All connections to panel mounted devices shall employ compression attached full 360° ring type or 'push-on' type terminators securely fastened to the device terminals. Wiring shall run behind the panel in a manner that is not visible from the operator's position. A 3" termination loop shall be formed immediately adjacent to each terminal.
- B. Terminal strips shall be fully insulated but allow insertion of test equipment probes. Each terminal segment shall be numbered to correspond with the drawings and conductor identification numbers.
- C. All wire and cable shall extend to each outlet location with complete electrical continuity and without any shorts or grounds. Cables shall run uninterrupted and un-spliced to each remote device.
- D. Cables shall be routed so as to maintain a separation of at least 2 feet from all heat sources and from ballasts, transformers, dimmers and all other sources of electromagnetic interference.
- E. Care shall be exercised during installation not to damage the cable insulation. Damaged cables shall be removed and replaced.
- F. Each cable termination shall be tagged and labeled.
- G. Wire color coding for all AV cabling shall be at the option of the Contractor, but each individual conductor shall be the same color throughout its entire length.
- H. After testing is complete, audio levels on all systems shall be set to levels satisfactory to the Owner.

### **3.4 SYSTEM CONFIGURATION**

- A. Contractor shall provide for configuration of all devices and software into a complete and fully operational AV System.
  - 1. All configuration files shall be provided to the Owner as part of the close-out package.
    - a. Contractor shall maintain ownership of any custom software files.
    - b. Contractor shall extend to the Owner a perpetual license for use and modification of any custom software files when used with systems provided as part of this scope of work.
- B. During the installation phase of the project, the Contractor shall work with the Owner to establish the baseline configuration requirements for the different AV elements.

### **3.5 CONFIGURATION REQUIREMENTS**

- A. An IP Addressing Plan shall be coordinated, developed, and finalized with the Owner and submitted for approval prior to implementation.
- B. VLAN(s) shall be configured to support the LAN and as identified during Owner network coordination efforts.
- C. Configure AV devices for centralized management via an Owner provided workstation connected to the network. Configuration and management software for the various network components shall be installed on the workstation. Training shall include management of the AV devices via the management workstation.



### 3.6 TESTING

- A. Project Testing: The overall Audio Visual Systems shall not be considered complete until On-Site Testing is completed. The purpose is to test the complete system and demonstrate that all specified features and performance criteria are met. All requirements of the specification shall be tested.
- B. Contractor shall follow the *Avixa/ANSI 10:2013 Audiovisual Systems Performance Verification* testing and documentation process and submit a completed testing plan prior to final Owner and Design Professional testing.
  - 1. Design Professional may elect to request retesting of individual rooms following the *Avixa/ANSI 10:2013* standard until satisfied that systems are properly installed and configured.
- C. For any system or equipment types not covered in the *Avixa/ANSI 10:2013* standard, Contractor shall provide the proposed test plan/procedures for each testing phase for review by the Owner or Design Professional. The test plan for each phase of testing shall detail the objectives of all tests. The tests shall clearly demonstrate that the system and its components fully comply with the requirements specified herein. The submission of Test Plans shall adhere to the following:
  - 1. A draft test plan shall be presented to the Owner at least forty-five (45) days prior to the scheduled start of each test.
  - 2. A workshop for reviewing comments shall be conducted with the Owner at least thirty (30) days prior to the scheduled start of each test.
  - 3. A final test plan shall be submitted to the Owner at least fourteen (14) days prior to the scheduled start of each test.
  - 4. Test plans shall contain at a minimum:
    - a. Functional procedures including use of any test or sample data.
    - b. Test equipment is to be identified by manufacturer and model.
    - c. Interconnection of test equipment and steps of operation shall be defined.
    - d. Expected results required to comply with specifications.
    - e. Testing matrix referencing Specification requirements with specific test procedures.
    - f. Record of test results with witness initials or signature and date performed.
    - g. Pass or fail evaluation with comments.
- D. The test procedures shall provide conformity to all Specification requirements. Satisfactory completion of the test procedure is necessary as a condition of system acceptance.
- E. All Test plans must be reviewed by the Owner. To successfully complete a test, the test document must be signed and dated by both the Contractor and the Owner.
- F. The Owner will review, witness and validate the execution of all formal test procedures prepared by the Contractor and deliverable under the contract to assure the tests cover all requirements and that there is a conformity between the conducted test, the test results and Specification requirements.
- G. Documentation verification both interconnects and operationally, shall be part of the test. Where documentation is not in accordance with the installed system interconnect and operating procedures, the system shall not be considered accepted until the system and documentation correlate.
- H. The Contractor shall provide the Owner or Owner representative the opportunity to participate in any or all of tests.
- I. Test Reports: The Contractor shall prepare, for each test, a test report document that shall certify successful completion of that test. Submit to the Owner's representative for review and acceptance within seven (7) days following each test. The test report shall contain, at a minimum:
  - 1. System power measurement results and settings
  - 2. Commentary on test results



3. A listing and discussion of all discrepancies between expected and actual results and of all failures encountered during the test and their resolution.
4. Complete copy of test procedures and test data sheets with annotations showing dates, times, initials, and any other annotations entered during execution of the test.
5. Signatures of persons who performed and witnessed the test.
6. Test Resolution: Any discrepancies or problems discovered during these tests shall be corrected by the Contractor at no cost to the Owner. The problems identified shall be corrected and the percentage of the entire system re-tested determined by the Owner before any subsequent testing is performed.

### **3.7 CLEANING**

- A. Remove all unnecessary tools and equipment, unused materials, packing materials, and debris from each area where work has been completed unless designated for storage.

### **3.8 TRAINING**

- A. The contractor shall provide a minimum of four hours of onsite training per space type with Owner specified trainees. Training may be broken into two categories with dedicated sessions for each: technical and operational.
  1. Technical training includes Owner's technical or administrative staff and is intended to cover overall space functionality, infrastructure, individual equipment operation, preventative maintenance, and troubleshooting.
  2. Operational training includes Owner's users or day-to-day administrative staff and is intended to cover overall space functionality, a walkthrough of typical use cases and troubleshooting.
- B. As part of the Contractor shall provide the trainees with detailed as-built information. The training shall provide trainees with a working knowledge of the system design and layout, ability to configure and monitor the system, and troubleshooting methods and techniques. In addition, the training shall cover testing, maintenance, and repair procedures for all equipment and applications, which are provided under this Specification.
- C. Course materials shall be delivered to the Owner. Final delivery of the course materials shall include a master hard copy of all materials and an electronic copy in a format reviewed in advance by the Owner. The Contractor shall supply a video recording of each training course.
- D. All training shall be completed a minimum of two weeks prior to the system becoming operational and utilized by the Owner. Training schedule subject to the Owner's review.

### **3.9 ACCEPTANCE**

- A. Acceptance will be withheld until the following have been completed successfully:
  1. Acceptance of all submittals
  2. Delivery of final documentation
  3. Successful testing
  4. Completion of training
  5. Demonstrate system to designated Owner personnel as required by applicable sections of these specifications. Use submitted operation and maintenance manual as reference during demonstration and training. Demonstrate as-built records are in format required and can lead troubleshooting technicians to port level of detail in field.

#### **END OF SECTION**



Audiovisual Space and Systems Summary Sheet							
Project		The College of New Jersey - Roscoe Hall					
Project Location		2000 Pennington Rd, Ewing, NJ					
Responding Bidder & Contact Information							
<p>Note: This summary and the following descriptions is intended to provide the Owner with line item pricing of major system components and total systems costs. This document is not to be treated as a complete bill of materials and it is the bidders responsibility to capture all costs for a complete and working system as described in the drawings and specification. Please refer to specification for "or equal" substitution requirements.</p> <p>Non-Equipment Costs are to be inclusive of all site labor, shipping, storage, engineering, warrantee, bond and other fees.</p> <p>Bidder is responsible for verifying formulas and all system and equipment counts as part of their response.</p>							
Item #	Systems	Enlarged Plan Callout	Equipment	Non-Equipment	Cost per System	System Count	Total Systems Cost
1	Student Lounge	TA6.02	\$ -	\$ -	\$ -	1	\$ -
2	Elevator Lobby	TA6.03	\$ -	\$ -	\$ -	1	\$ -
3	Classroom G25	TA6.07	\$ -	\$ -	\$ -	1	\$ -
4	Classroom - Typical	TA6.14 & TA6.06	\$ -	\$ -	\$ -	4	\$ -
5	Classroom - G26	TA6.12	\$ -	\$ -	\$ -	1	\$ -
6	CETL Learning Studio	TA6.08	\$ -	\$ -	\$ -	1	\$ -
7	Mentoring Center	TA6.13	\$ -	\$ -	\$ -	1	\$ -
8	CETL Seminar Room	TA6.11	\$ -	\$ -	\$ -	1	\$ -
9	Main Lobby	TA6.01	\$ -	\$ -	\$ -	1	\$ -
10	Seminar	TA6.05	\$ -	\$ -	\$ -	1	\$ -
11	Office		\$ -	\$ -	\$ -	5	\$ -
12	Small Group Study (refer to 'Small' tab)		\$ -	\$ -	\$ -	2	\$ -
13	Large Group Study (refer to 'Large' tab)		\$ -	\$ -	\$ -	2	\$ -
14	Typical Classroom Second display		\$ -	\$ -	\$ -	4	\$ -
15	Seminar Second display (refer to 'Seminar ALT' tab)		\$ -	\$ -	\$ -	1	\$ -
16	CETL Seminar Room Second Display		\$ -	\$ -	\$ -	1	\$ -
<b>TOTALS</b>							
Equipment Cost Summary						\$	-
Non-Equipment Costs Summary						\$	-
<b>Grand Total (Basis of Award)</b>						\$	-
All equipment marked as OFE has been purchased separately by the college and should not be included in the total equipment cost.							
<b>WARRANTEES, SERVICE AGREEMENTS &amp; LABOR COSTS</b>							
First year warrantee to be included in base scope equipment and non-equipment costs. Provide costs for the second and third year warrantee matching the base							
Warrantee Year Two						\$	-
Warrantee Year Three						\$	-
Quarterly One Day Service Appointment (per appointment)						\$	-



Space Type	Student lounge					
Description	Lounge display running owner standard signage platform on OFE PC					
Supported Use Cases	Digital Signage					
Notable Features	OFE PC to be configured to run owner standard signage platform. TCNJ to configure					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
65" Flat Panel Display; 16x7	NEC or equal	E658 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	1	\$ -
Video Sources						
Media Player License	Visix or equal	VX-S-CPO or equal		\$ -	1	\$ -
1 Year Maintenance contract	Visix or equal	VX-S-SMX or equal		\$ -	1	\$ -
OFE signage PC	OFE	OFE	Running OFE Visix signage platform	\$ _____	0	\$ _____
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Elevator Lobby					
Description	Lobby display running owner standard signage platform on Mersive Solstice, includes a wireless presentation device for screen casting					
Supported Use Cases	Digital Signage, wireless presentation, wireless collaboration					
Notable Features	Signage to run on the Mersive POD. TCNJ to configure this					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
65" Flat Panel Display; 16x7	NEC or equal	E658 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	1	\$ -
Video Sources						
HTML5 playlist license and viewer license	Visix or equal	VX-S-PVO or equal		\$ -	1	\$ -
Remote implementation support service	Visix or equal	VX-S-IMW or equal		\$ -	1	\$ -
Wireless Collaboration Device	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



<b>Space Type</b>	<b>Classroom G25</b>					
<b>Description</b>	Standard Classroom space with dual wall mounted displays, dual wall mounted PTZ cameras, overhead speakers and microphone arrays, dual channel wireless microphone system, OFE pc, wall mounted touchpanel and connections for guest instructor laptop. System includes a wireless collaboration device. All video transmitted via AV over IP system with a local network switch. System includes a USB sharing switch to allow the room dsp and cameras to be switched between the OFE pc and a guest instructor laptop. All equipment will be rack mounted at the teachers station.					
<b>Supported Use Cases</b>	Presentation, video conferencing					
<b>Notable Features</b>	room resources will be sharable to both an installed pc and a guest laptop connection					
<b>External Interfaces</b>	Connection to building fire alarm system for muting					
<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Notes</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Total Cost</b>
<b>Display System</b>						
98" Flat Panel Display; 16x7 450 nit	NEC or equal	E988 or equal		\$ -	2	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	2	\$ -
ADA compliant in wall scissor mount for 98" display	RPVisuals or equal	RPWM-32MAXBF-XMS-ADA-NB		\$ -	2	\$ -
in wall box for ADA scissor mount	RPVisuals or equal	RPWM-32MAXBF-BOX-KIT	to be installed by EC	\$ -	2	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	2	\$ -
<b>Video Conferencing System</b>						
4k USB PTZ camera with face tracking / autoframing	Clearone or equal	910-2100-012 or equal	Unite 160 4k	\$ -	2	\$ -
Thin Profile wall mount	Clearone or equal	910-2100-104 or equal	Wall mount for Unite 160 4k camera	\$ -	2	\$ -
Camera Extension system	SCT or equal	RCU2S-B10 or equal		\$ -	2	\$ -
<b>Video Sources</b>						
Room PC	OFE	OFE	Includes wireless keyboard and mouse and display	\$ _____	1	\$ _____
Wireless Collaboration Device	Mersive or equal	SP-8000-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
<b>Video Distribution</b>						
4K60 4:4:4 HDR Network AV Encoder	Crestron or equal	DM-NVX-E30 or equal		\$ -	4	\$ -
2-input USB 3.2 Data Matrix Switcher	Crestron or equal	USB-SW-200 or equal		\$ -	1	\$ -
<b>Audio System</b>						
12 in/8 out audio dsp with USB audio, GPIO, and dante audio networking	Clearone or equal	910-3200-101-D or equal	Converge Pro 2 128SRD	\$ -	1	\$ -
Ceiling mic array	Clearone or equal	910-3200-208-U or equal	BMA 360 Microphone	\$ -	2	\$ -
Dual Channel Digital Wireless Receiver	Shure or equal	ULXD4D or equal		\$ -	1	\$ -
Handheld Transmitter w/ SM58 cartridge	Shure or equal	ULXD2/SM58 or equal		\$ -	1	\$ -
Wireless Bodypack Transmitter	Shure or equal	ULXD1 or equal		\$ -	1	\$ -
Lavalier Microphone	Shure or equal	MX150B/C-TQG or equal		\$ -	1	\$ -
Dual Docking recharging station	Shure or equal	SBC200 or equal		\$ -	1	\$ -



6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	12	\$ -
<b>Assistive Listening System</b>						
LISTENIR IDSP LEVEL II SYSTEM	Listen or equal	LS-91 or equal		\$ -	1	\$ -
<b>Control Components</b>						
4-Series® Room Media Controller	Crestron or equal	RMC4 or equal		\$ -	1	\$ -
Table top 7" Touch Screen	Crestron or equal	TS-770-X-S or equal	Color Selection Black/white by Owner/Architect	\$ -	1	\$ -
24 port POE+ managed Network Switch	Netgear or equal	XSM4216F-100NAS or equal		\$ -	1	\$ -
<b>Instructors Desk</b>						
Custom	Miller's Presentation Furniture or equal	TCNJ-4002 or equal	Includes integrated 16ru rack. Color selection by owner/architect	\$ -	1	\$ -
<b>Equipment Racks</b>						
Dual LED Worklight	Middle Atlantic or equal	LT-CABUTL-DUAL or equal		\$ -	1	\$ -
Horizontal Power Distribution Unit w/ integr	Middle Atlantic or equal	PDCOOL-1115R or equal		\$ -	1	\$ -
<b>Accessories</b>						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	2	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warranty)						\$ -
System Totals						\$ -



Space Type	Typical Classroom					
<b>Description</b>	Standard Classroom space with single wall mounted display, dual wall mounted PTZ cameras, overhead speakers and microphone arrays, OFE PC, wall mounted touchpanel and connections for guest instructor laptop. System includes a wireless collaboration device. All video transmitted via AV over IP system with a local network switch. System includes a USB sharing switch to allow the room dsp and cameras to be switched between the OFE pc and a guest instructor laptop. All equipment will be rack mounted at the teachers station.					
<b>Supported Use Cases</b>	Presentation, video conferencing					
<b>Notable Features</b>	room resources will be sharable to both an installed pc and a guest laptop connection					
<b>External Interfaces</b>	Connection to building fire alarm system for muting					
<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Notes</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Total Cost</b>
<b>Display System</b>						
98" Flat Panel Display; 16x7 450 nit	NEC or equal	E988 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
ADA compliant in wall scissor mount for 98" display	RPVisuals or equal	RPWM-32MAXBF-XMS-ADA-NB		\$ -	1	\$ -
in wall box for ADA scissor mount	RPVisuals or equal	RPWM-32MAXBF-BOX-KIT	to be installed by EC	\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
<b>Video Conferencing System</b>						
4k USB PTZ camera with face tracking / autoframing	Clearone or equal	910-2100-012 or equal	Unite 160 4k	\$ -	2	\$ -
Thin Profile wall mount	Clearone or equal	910-2100-104 or equal	Wall mount for Unite 160 4k camera	\$ -	2	\$ -
In Wall camera enclosure	Vaddio or equal	999-2225-020 or equal	In wall mount for Unite 160 4k camera	\$ -	2	\$ -
Camera Extension system	SCT or equal	RCU2S-B10 or equal		\$ -	2	\$ -
<b>Video Sources</b>						
Room PC	OFE	OFE	Includes wireless keyboard and mouse and display	\$ _____	1	\$ _____
Wireless Collaboration Device	Mersive or equal	SP-8000-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
<b>Video Distribution</b>						
4K60 4:4:4 HDR Network AV Encoder	Crestron or equal	DM-NVX-E30 or equal		\$ -	4	\$ -
2-input USB 3.2 Data Matrix Switcher	Crestron or equal	USB-SW-200 or equal		\$ -	1	\$ -
<b>Audio System</b>						
12 in/8 out audio dsp with USB audio, GPIO, and dante audio networking	Clearone or equal	910-3200-101-D or equal	Converge Pro 2 128SRD	\$ -	1	\$ -
Ceiling mic array	Clearone or equal	910-3200-208-U or equal	BMA 360 Microphone	\$ -	2	\$ -
6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	6	\$ -
<b>Control Components</b>						
4-Series® Room Media Controller	Crestron or equal	RMC4 or equal		\$ -	1	\$ -



7" Wall Mounted Touch Screen	Crestron or equal	TSW-770-X-S or equal	Color Selection Black/white by Owner/Architect	\$ -	1	\$ -
24 port POE+ managed Network Switch	Netgear or equal	XSM4216F-100NAS or equal		\$ -	1	\$ -
<b>Instructors Desk</b>						
Custom	Miller's Presentation Furniture or equal	TCNJ-4002 or equal	Includes integrated 16ru rack. Color selection by owner/architect	\$ -	1	\$ -
<b>Equipment Racks</b>						
Dual LED Worklight	Middle Atlantic or equal	LT-CABUTL-DUAL or equal		\$ -	1	\$ -
Horizontal Power Distribution Unit w/ integrated	Middle Atlantic or equal	PDCOOL-1115R or equal		\$ -	1	\$ -
<b>Accessories</b>						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warranty)						\$ -
System Totals						\$ -



Space Type	Classroom G26					
	Single display Classroom space with dual wall mounted PTZ cameras, overhead speakers and microphone arrays, OFE pc, wall mounted touchpanel and connections for guest instructor laptop. System includes a wireless collaboration device. All video switched by small format video switch and extended to display. Includes local control processor and network switch. System includes a USB sharing switch to allow the room dsp and cameras to be switched between the OFE pc and a guest instructor laptop. All equipment will be rack mounted at the teachers station.					
Description						
Supported Use Cases	Presentation, video conferencing					
Notable Features	room resources will be sharable to both an installed pc and a guest laptop connection					
External Interfaces	Connection to building fire alarm system for muting					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
98" Flat Panel Display; 16x7 450 nit	NEC or equal	E988 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
ADA compliant in wall scissor mount for 98" display	RPVisuals or equal	RPWM-32MAXBF-XMS-ADA-NB		\$ -	1	\$ -
in wall box for ADA scissor mount	RPVisuals or equal	RPWM-32MAXBF-BOX-KIT	to be installed by EC	\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Video Conferencing System						
4k USB PTZ camera with face tracking / autoframing	Clearone or equal	910-2100-012 or equal	Unite 160 4k	\$ -	2	\$ -
Thin Profile wall mount	Clearone or equal	910-2100-104 or equal	Wall mount for Unite 160 4k camera	\$ -	2	\$ -
In Wall camera enclosure	Vaddio or equal	999-2225-020 or equal	In wall mount for Unite 160 4k camera	\$ -	2	\$ -
Camera Extension system	SCT or equal	RCU2S-B10 or equal		\$ -	2	\$ -
Video Sources						
			Includes wireless keyboard and mouse and display			
Room PC	OFE	OFE	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Wireless Collaboration Device	Mersive or equal	SP-8000-E5 or equal				
Video Distribution						
4K60 4:4:4 HDR Network AV Encoder	Crestron or equal	DM-NVX-E30 or equal		\$ -	4	\$ -
2-input USB 3.2 Data Matrix Switcher	Crestron or equal	USB-SW-200 or equal		\$ -	1	\$ -
Audio System						
12 in/8 out audio dsp with USB audio, GPIO, and dante audio networking	Clearone or equal	910-3200-101-D or equal	Converge Pro 2 128SRD	\$ -	1	\$ -
Ceiling mic array	Clearone or equal	910-3200-208-U or equal	BMA 360 Microphone	\$ -	2	\$ -
6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	6	\$ -
Control Components						



4-Series® Room Media Controller	Crestron or equal	RMC4 or equal		\$ -	1	\$ -
			Color Selection Black/white by Owner/Architect			
7" Wall Mounted Touch Screen	Crestron or equal	TSW-770-X-S or equal		\$ -	1	\$ -
24 port POE+ managed Network Switch	Netgear or equal	XSM4216F-100NAS or equal		\$ -	1	\$ -
<b>Instructors Desk</b>						
Custom	Miller's Presentation Furniture or equal	TCNJ-4002 or equal	Includes integrated 16ru rack. Color selection by owner/architect	\$ -	1	\$ -
<b>Equipment Racks</b>						
Dual LED Worklight	Middle Atlantic or equal	LT-CABUTL-DUAL or equal		\$ -	1	\$ -
Horizontal Power Distribution Unit w/ integrated	Middle Atlantic or equal	PDCOOL-1115R or equal		\$ -	1	\$ -
<b>Accessories</b>						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warranty)						\$ -
System Totals						\$ -



Space Type	CETL Learning Studio					
Description	Learning space with multiple OFE displays each with wireless collaboration device. Space will include overhead speakers attached to wireless collaboration device.					
Supported Use Cases	Wireless collaboration					
Notable Features	Wireless collaboration units must be able to bridge together					
External Interfaces	Connection to building fire alarm system for muting					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
Owner furnished (6) 55" display OFE (ELF FUNDED)	NEC	E558	OFE (ELF FUNDED)	\$ _____	0	\$ _____
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	6	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	6	\$ -
Video Sources						
Wireless Collaboration Device OFE (ELF FUNDED)	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year OFE (ELF FUNDED)	\$ _____	0	\$ _____
Active Learning Module OFE (ELF FUNDED)	Mersive or equal		OFE (ELF FUNDED)	\$ _____	0	\$ _____
Audio System						
Two Channel Amp, 60 watts at 8 or 4 ohms or 70v	QSC or equal	SPA4-60 or equal		\$ -	1	\$ -
6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	6	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	6	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Mentoring Center					
Description	Mentoring space with wall mounted display with a camera/mic/speaker USB bar and wireless collaboration device. Display switching and volume control via wall mounted button panel					
Supported Use Cases	wireless collaboration, presentation, soft codec conferencing					
Notable Features	None					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
75" Flat Panel Display; 16x7	NEC or equal	E758 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	PWRIWUB or equal		\$ -	1	\$ -
Video Conferencing System						
All-in-One 4K Conference Cam with 120° FOV Lens	Logitech or equal	960-001101 or equal	Logitech Meetup	\$ -	1	\$ -
TV Mount for Meetup camera	Logitech or equal	939-001656 or equal	Wall Mount for meetup camera	\$ -	1	\$ -
Video Sources						
Wireless Collaboration Device	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Video Distribution						
Dual 4K HDMI® HDBaseT + USB-C®, 3.5mm, and USB-B over Cat Extender Dual Gang Wall Plate Transmitter - 4K 60Hz	C2G or equal	C2G30019 or equal		\$ -	1	\$ -
HDMI HDBaseT plus 3.5mm, USB-A, and RS232 over Cat Audio De-Embedding Extender Box Receiver 4K 60Hz	C2G or equal	C2G30020 or equal		\$ -	1	\$ -
2-input USB 3.2 Data Matrix Switcher	Crestron or equal	USB-SW-200 or equal		\$ -	1	\$ -
Control Components						
Controller with RS-232 Control - Decorator-Style Wallplate	Extron or equal	MLC 62 RS D	Single Gang	\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
HDMI and USB wall plate	Per Contractor	Per Contractor		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	CETL Seminar Room					
Description	Single display Conference space with dual wall mounted PTZ cameras, overhead speakers and microphone arrays, OFE pc, wall mounted					
Supported Use Cases	Presentation, video conferencing					
Notable Features	room resources will be sharable to both an installed pc and a guest laptop connection					
External Interfaces	Connection to building fire alarm system for muting					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
98" Flat Panel Display; 16x7 450 nit	NEC or equal	E988 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
ADA compliant in wall scissor mount for 98" display	RPVisuals or equal	RPWM-32MAXBF-XMS-ADA-NB		\$ -	1	\$ -
in wall box for ADA scissor mount	RPVisuals or equal	RPWM-32MAXBF-BOX-KIT	to be installed by EC	\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Video Conferencing System						
4k USB PTZ camera with face tracking / autoframing	Clearone or equal	910-2100-012 or equal	Unite 160 4k	\$ -	2	\$ -
Thin Profile wall mount	Clearone or equal	910-2100-104 or equal	Wall mount for Unite 160 4k camera	\$ -	1	\$ -
In Wall camera enclosure	Vaddio or equal	999-2225-020 or equal	In wall mount for Unite 160 4k camera	\$ -	1	\$ -
Camera Extension system	SCT or equal	RCU2S-B10 or equal		\$ -	2	\$ -
Video Sources						
Room PC	OFE	OFE	Includes wireless keyboard and mouse and display	\$ _____	±	\$ _____
Wireless Collaboration Device	Mersive or equal	SP-8000-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Video Distribution						
4K60 4:4:4 HDR Network AV Encoder	Crestron or equal	DM-NVX-E30 or equal		\$ -	2	\$ -
Audio System						
12 in/8 out audio dsp with USB audio, GPIO, and dante audio networking	Clearone or equal	910-3200-101-D or equal	Converge Pro 2 128SRD	\$ -	1	\$ -
Ceiling mic array	Clearone or equal	910-3200-208-U or equal	BMA 360 Microphone	\$ -	2	\$ -
6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	6	\$ -
Assistive Listening System						
LISTENIR IDSP LEVEL II SYSTEM	Listen or equal	LS-91 or equal		\$ -	1	\$ -
Control Components						
4-Series® Room Media Controller	Crestron or equal	RMC4 or equal		\$ -	1	\$ -
7" Wall Mounted Touch Screen	Crestron or equal	TSW-770-X-S or equal	Color Selection Black/white by Owner/Architect	\$ -	1	\$ -
24 port POE+ managed Network Switch	Netgear or equal	XSM4216F-100NAS or equal		\$ -	1	\$ -
Equipment Racks						



Reference Series furniture grade rack - 20ru	Middle Atlantic or equal	RFR-2028XX or equal	Color Selection by Owner/Architect	\$ -	1	\$ -
Dual LED Worklight	Middle Atlantic or equal	LT-CABUTL-DUAL or equal		\$ -	1	\$ -
Horizontal Power Distribution Unit w/ integ	Middle Atlantic or equal	PDCOOL-1115R or equal		\$ -	1	\$ -
<b>Accessories</b>						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
System Totals						\$ -



Space Type	1st Floor Lobby					
Description	Lobby display running owner standard signage platform on OFE pc					
Supported Use Cases	Digital Signage					
Notable Features	OFE PC to be configured to run owner standard signage platform. TCNJ to configure					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
65" Flat Panel Display; 16x7	NEC or equal	E658 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	1	\$ -
Video Sources						
Media Player License	Visix or equal	VX-S-CPO or equal		\$ -	1	\$ -
1 Year Maintenance contract	Visix or equal	VX-S-SMX or equal		\$ -	1	\$ -
OFE signage PC	OFE	OFE	Running OFE Visix signage platform	\$ _____	±	\$ _____
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Seminar					
	Single display Classroom space with dual wall mounted PTZ cameras, overhead speakers and microphone arrays, dual channel wireless microphone system, OFE pc, wall mounted touchpanel and connections for guest instructor laptop. System includes a wireless collaboration device. All video switched by small format video switch and extended to display. Includes local control processor and network switch. System includes a USB sharing switch to allow the room dsp and cameras to be switched between the OFE pc and a guest instructor laptop. All equipment will be rack mounted at the teachers station.					
Description						
Supported Use Cases	Presentation, video conferencing					
Notable Features	room resources will be sharable to both an installed pc and a guest laptop connection					
External Interfaces	Connection to building fire alarm system for muting					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
75" Flat Panel Display; 16x7	NEC or equal	E758 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	PWRIWUB or equal		\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Video Conferencing System						
4k USB PTZ camera with face tracking / autoframing	Clearone or equal	910-2100-012 or equal	Unite 160 4k	\$ -	2	\$ -
Thin Profile wall mount	Clearone or equal	910-2100-104 or equal	Wall mount for Unite 160 4k camera	\$ -	2	\$ -
Camera Extension system	SCT or equal	RCU2S-B10 or equal		\$ -	2	\$ -
Video Sources						
			Includes wireless keyboard and mouse and display			
Room PC	OFE	OFE		\$ _____	1	\$ _____
Wireless Collaboration Device	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Video Distribution						
4K60 4:4:4 HDR Network AV Encoder	Crestron or equal	DM-NVX-E30 or equal		\$ -	3	\$ -
2-input USB 3.2 Data Matrix Switcher	Crestron or equal	USB-SW-200 or equal		\$ -	1	\$ -
Audio System						
12 in/8 out audio dsp with USB audio, GPIO, and dante audio networking	Clearone or equal	910-3200-101-D or equal	Converge Pro 2 128SRD	\$ -	1	\$ -
Ceiling mic array	Clearone or equal	910-3200-208-U or equal	BMA 360 Microphone	\$ -	2	\$ -
6.5" Two-way low-profile ceiling speaker, 70/100V transformer with 16Ω bypass, 135° conical DMT coverage	QSC or equal	AD-C6T-LP or equal	includes C-ring and rails for blind mount installation, Ø305 mm cut-out	\$ -	6	\$ -
Assistive Listening System						
LISTENIR IDSP LEVEL II SYSTEM	Listen or equal	LS-91 or equal		\$ -	1	\$ -
Control Components						
4-Series® Room Media Controller	Crestron or equal	RMC4 or equal		\$ -	1	\$ -



7" Wall Mounted Touch Screen	Crestron or equal	TSW-770-X-S or equal	Color Selection Black/white by Owner/Architect	\$ -	1	\$ -
24 port POE+ managed Network Switch	Netgear or equal	XSM4216F-100NAS or equal		\$ -	1	\$ -
<b>Equipment Racks</b>						
Reference Series furniture grade rack - 20ru	Middle Atlantic or equal	RFR-2028XX or equal	Color Selection by Owner/Architect	\$ -	1	\$ -
Dual LED Worklight	Middle Atlantic or equal	LT-CABUTL-DUAL or equal		\$ -	1	\$ -
Horizontal Power Distribution Unit w/ integrated co	Middle Atlantic or equal	PDCOOL-1115R or equal		\$ -	1	\$ -
<b>Accessories</b>						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
System Totals						\$ -



Space Type	Private office					
Description	Private office with wall mounted display and wireless collaboration device					
Supported Use Cases	Presentation					
Notable Features	None					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
43" Flat Panel Display; 16x7	NEC or equal	E438 or equal	OFE (ELF FUNDED)	\$ _____	0	\$ _____
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal	OFE (ELF FUNDED)	\$ _____	0	\$ _____
Flat Panel Display Articulating Wall Mount	Chief or equal	TS525TU or equal		\$ -	1	\$ -
Video Sources						
Wireless Collaboration Device -	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year OFE (ELF FUNDED)	\$ _____	0	\$ _____
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Small Group Study					
Description	Group study space with wall mounted display with a camera/mic/speaker USB bar and wireless collaboration device. Display switching and volume control via wall mounted button panel					
Supported Use Cases	wireless collaboration, presentation, soft codec conferencing					
Notable Features	None					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
55" Flat Panel Display; 16x7	NEC or equal	E558 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	1	\$ -
Video Conferencing System						
All-in-One 4K Conference Cam with 120° FOV Lens	Logitech or equal	960-001101 or equal	Logitech Meetup	\$ -	1	\$ -
TV Mount for Meetup camera	Logitech or equal	939-001498 or equal	Wall Mount for meetup camera	\$ -	1	\$ -
Video Sources						
Wireless Collaboration Device	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Control Components						
Controller with RS-232 Control - Decorator-Style Wallplate	Extron or equal	MLC 62 RS D	Single Gang	\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
HDMI and USB wall plate	Per Contractor	Per Contractor		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Large Group Study					
Description	Group study space with wall mounted display with a camera/mic/speaker USB bar and wireless collaboration device. Display switching and volume control via wall mounted button panel					
Supported Use Cases	wireless collaboration, presentation, soft codec conferencing					
Notable Features	None					
External Interfaces	None					
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
65" Flat Panel Display; 16x7	NEC or equal	E658 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	MWRIWUB or equal		\$ -	1	\$ -
Video Conferencing System						
All-in-One 4K Conference Cam with 120° FOV Lens	Logitech or equal	960-001101 or equal	Logitech Meetup	\$ -	1	\$ -
TV Mount for Meetup camera	Logitech or equal	939-001498 or equal	Wall Mount for meetup camera	\$ -	1	\$ -
Video Sources						
Wireless Collaboration Device	Mersive or equal	SP-8100-E5 or equal	Unlimited Enterprise - 5 year	\$ -	1	\$ -
Control Components						
Controller with RS-232 Control - Decorator-Style Wallplate	Extron or equal	MLC 62 RS D	Single Gang	\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
HDMI and USB wall plate	Per Contractor	Per Contractor		\$ -	1	\$ -
Universal 4K HDMI® Dongle Adapter Ring with Color Coded Mini DisplayPort™ and USB-C	Cables2Go or equal	C2G30044 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
System Totals						\$ -



Space Type	Typical Classroom - Second Display Alternate					
Description						
Supported Use Cases						
Notable Features						
External Interfaces						
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
98" Flat Panel Display; 16x7 450 nit	NEC or equal	E988 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Universal-Pull out Wallmate 32B Kit	RPVisuals or equal	RPWM-32B-XM-UNV or equal		\$ -	1	\$ -
in wall box for ADA scissor mount	RPVisuals or equal	RPWM-32MAXBF-BOX-KIT	to be installed by EC	\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



Space Type	Seminar Second Display Alternate					
Description						
Supported Use Cases						
Notable Features						
External Interfaces						
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
75" Flat Panel Display; 16x7	NEC or equal	E758 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	PWRIWUB or equal		\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
Equipment Totals						\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
System Totals						\$ -



Space Type	CETL Seminar Room - Alternate					
Description	Add Alternate to include a second monitor for the space					
Supported Use Cases						
Notable Features						
External Interfaces						
Description	Manufacturer	Model	Notes	Unit Cost	Quantity	Total Cost
Display System						
75" Flat Panel Display; 16x7	NEC or equal	E758 or equal		\$ -	1	\$ -
Flat Panel Display 5 year extended warranty	NEC or equal	ADVEXMX-5Y-12 or equal		\$ -	1	\$ -
Flat Panel Display Articulating Wall Mount	Chief or equal	PWRIWUB or equal		\$ -	1	\$ -
4K60 4:4:4 HDR Network AV Decoder	Crestron or equal	DM-NVX-D30 or equal		\$ -	1	\$ -
Accessories						
Compact surge protector	SurgeX or equal	SA-82 or equal		\$ -	1	\$ -
Cabling & Accessories	Per Contractor	Per Contractor		\$ -	1	\$ -
					Equipment Totals	\$ -
Non-Equipment Costs (project management, engineering, shipping, onsite installation, commissioning, warrantee)						\$ -
					System Totals	\$ -



**REFERENCE:** The College of New Jersey  
REBID Roscoe West Hall Lower-Level AV Project  
Bid No. AB250012

**CLARIFICATIONS:**

1. The AV spec includes a one-year system warrantee including hardware, software and labor as outlined in 274100 including sections 1.16 and to provide pricing for years 2&3 separately as outlined in section 1.18. Note OFE equipment includes the labor portion of the system warrantee only.
2. Cables, cores, conduits and back boxes are the responsibility of the General Contractor.
3. Display back boxes are provided by the AV contractor and will be installed by the General Contractor.
4. All alternates (i.e., second displays, etc.) are being accepted.
5. In the CETL – Seminar Room, the 20RU rack reference in the AV design is part of the AV scope of work. Final location to be confirmed.
6. No warranty is expected on equipment. Warrantee on installation labor is required per specification.
7. Refer to system flow diagrams for amplifiers. Speakers are fed from integral amplifiers in ceiling microphone arrays.



ABBREVIATIONS	
(E)	EXISTING TO REMAIN
(ED)	EXISTING TO BE DEMOLISHED
(ER)	EXISTING TO BE RELOCATED
(N)	NEW
ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AOR	AREA OF REFUGE: 2 WAY COMMUNICATION
AV	AUDIOVISUAL
AVC	AUDIOVISUAL CONTRACTOR
BICISB	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
CAB	CABINET
CDT	CONDUIT
CM	CONSTRUCTION MANAGER
CMP	COMMUNICATIONS MULTIPURPOSE PLENUM
CMR	COMMUNICATIONS MULTIPURPOSE RISER
CP	CENTRAL PATCHING LOCATION
DP	DIGITAL SIGNAL PROCESSOR
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
FOV	FIELD OF VIEW
FT	FEET
G, GND	GROUND
GC	GENERAL CONTRACTOR
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
JB	JUNCTION BOX
LAN	LOCAL AREA NETWORK
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MFG	MANUFACTURER
N/A	NOT APPLICABLE
NEXT	NEAR END CROSS TALK
NIC	NOT IN CONTRACT
No. OR #	NUMBER
NFS	NOT TO SCALE
OFS	OWNER FURNISHED EQUIPMENT
OFNP	OPTICAL FIBER NON CONDUCTIVE PLENUM
OFNR	OPTICAL FIBER NON CONDUCTIVE RISER
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
POS	POINT OF SALES
PWR	POWER
REC	RECESSED
RECEPT	RECEPTACLE
RM	ROOM
RU	RACK UNIT (1.75in)
SAN	STORAGE AREA NETWORK
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TC	TELECOMMUNICATIONS CONTRACTOR
TEL	TELEPHONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMBB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TYP	TYPICAL
UTP	UNSHIELDED TWISTED PAIR
VoIP	VOICE OVER INTERNET PROTOCOL
WAN	WIDE AREA NETWORK
WP	WALL PHONE

MISC. LEGEND / TAGS	
SYMBOL	DESCRIPTION
	ELEVATION SYMBOL
	ELEVATION NUMBER
	DRAWING NUMBER
	DETAIL CALL OUT SYMBOL
	DETAIL NUMBER
	DRAWING NUMBER
	KEYED NOTE TAG
	SHEET NOTE TAG
	REVISION NUMBER X

GENERAL NOTES	
1.	THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES AND PERFORMING ALL OPERATIONS TO COMPLETE THE CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE CONTRACT DRAWINGS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO THE OWNER.
2.	THE WORK SHALL CONFORM TO THE MORE STRINGENT OF ALL APPLICABLE CODES & REGULATIONS, UL AND FM GUIDELINES (AS APPLICABLE), MANUFACTURER'S LITERATURE AND RECOMMENDATIONS, BUILDING OPERATOR'S REQUIREMENTS, AND TO THE REQUIREMENTS OF FEDERAL, STATE AND LOCAL REGULATORY AGENCIES AND AUTHORITIES HAVING JURISDICTION. PROJECT'S FURNISHING, PASSIVE HOUSE, FITTEL, OR OTHER SUSTAINABILITY CERTIFICATIONS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS.
3.	THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE EXTENT, GENERAL CHARACTER, LOCATION AND ARRANGEMENT OF THE WORK UNDER THIS CONTRACT. [EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS.] WHERE JOB CONDITIONS REQUIRE MINOR CHANGES OR ADJUSTMENTS IN THE INDICATED LOCATIONS OR ARRANGEMENT OF THE WORK, SUCH CHANGES SHALL BE PROVIDED WITHOUT EXTRA COST. THE CONTRACTOR SHALL RE-INSTALL EQUIPMENT THAT HAS INADEQUATE OR UNSAFE ACCESSIBILITY.
4.	INSTALLATION OF WORK SHALL PROVIDE REASONABLE ACCESSIBILITY FOR OPERATION, INSPECTION AND MAINTENANCE OF EQUIPMENT AND ACCESSORIES. PROVIDE CLEARANCES REQUIRED BY MANUFACTURERS AND APPLICABLE CODES. ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES.
5.	THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK", "ELECTRICAL WORK", "PLUMBING WORK", ETC. SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
6.	THE CM/IG SHALL MAKE SETS OF THE BID DOCUMENTS CONSISTING OF COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS, AND ISSUE THEM TO EACH OF THE PRIME AND SUB-CONTRACTORS. EVERY PRIME AND SUB-CONTRACTOR ON EACH BIDDING TEAM SHALL RECEIVE COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS. THERE ARE NOTES AND CROSS REFERENCES FOR VARIOUS TRADE CONTRACTORS IN MULTIPLE TRADE OR DISCIPLINE DRAWINGS AND SPECIFICATIONS. THUS, EACH CONTRACTOR IS TO RECEIVE COMPLETE SETS OF THE BID DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THESE DRAWINGS FROM CM/IG. EACH CONTRACTOR IS RESPONSIBLE FOR THEIR WORK AS NOTED ON THE OTHER DISCIPLINE DOCUMENTS. BIDDERS ARE RESPONSIBLE FOR ALL COSTS FOR EACH SET OF BID DOCUMENTS REQUESTED.
7.	CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULL COORDINATION EFFORT IN ORDER TO CREATE A FINALIZED COORDINATED LAYOUT OF ALL EQUIPMENT, SYSTEMS, DUCTWORK, PIPING AND ALL OTHER ITEMS WITHIN THEIR RESPECTIVE SCOPE. THE CONTRACTORS COORDINATION EFFORT SHALL INCLUDE COORDINATED INFORMATION FROM ALL OTHER TRADE CONTRACTORS INVOLVED IN THE PROJECT SCOPE IN ORDER TO PROVIDE COORDINATION BETWEEN TRADES AND ALL EXISTING CONDITIONS. ALL ERRORS MADE AS A RESULT OF A LACK OF COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CORRECTED AT NO ADDITIONAL COST TO THE PROJECT. MINOR RELOCATIONS AND SHIFTS OF EQUIPMENT, DUCTWORK, AND PIPING WHICH DO NOT CHANGE THE DESIGN INTENT INDICATED ON THE CONTRACT DOCUMENTS, REQUIRED TO ACCOMMODATE FIELD CONDITIONS ARE AT THE CONTRACTORS DISCRETION AND DO NOT REQUIRE ENGINEER APPROVAL.
8.	CONTRACTOR SHALL ARRANGE AND OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL RELATED FEES.
9.	THE DRAWINGS INDICATE APPROXIMATE LOCATIONS BASED UPON INFORMATION OBTAINED WITHOUT REMOVING CEILING TILES OR WALLS. THEREFORE, THE CONTRACTOR SHALL INCLUDE THEIR BID CONTINGENCY COSTS TO ADDRESS CONFLICTS BETWEEN DESIGN AND EXISTING CONDITIONS. ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND/OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
10.	FOR ANY DISCREPANCY BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BASE THEIR BID UPON THE MOST STRINGENT REQUIREMENT (QUALITY, QUANTITY, SIZE, ETC.). THE CONTRACTOR SHALL IDENTIFY DISCREPANCIES AS PART OF THEIR BID.
11.	PRIOR TO DEMOLITION, THE CONTRACTOR SHALL LOG ALL EXISTING EQUIPMENT AND TRACE ELECTRICAL, FIRE ALARM, AND CONTROL CIRCUITS THAT SERVE SUCH EQUIPMENT.
12.	ALL SERVICES TO EXISTING BUILDINGS SHALL BE MAINTAINED DURING CONSTRUCTION UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL COORDINATE ALL SYSTEM SHUT DOWNS AND TIMING WITH OWNER.
13.	THE CONTRACTOR SHALL EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.
14.	EXISTING EQUIPMENT THAT INTERFERES WITH NEW ARRANGEMENT SHALL BE REMOVED, REINSTALLED, RELOCATED, REROUTED, EXTENDED OR ABANDONED AS REQUIRED, TO SUIT THE NEW ARRANGEMENT.
15.	WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK AND/OR PIPING, CAREFULLY COORDINATE SIZES AND LOCATIONS OF THE ELEMENTS BEFORE FABRICATION. COORDINATE WITH FINAL LOCATION OF BEAM PENETRATIONS AND SHEAR WALL PENETRATIONS.
16.	CONTRACTOR SHALL COORDINATE LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS WITH STRUCTURAL AND OTHER TRADES.
17.	PROVIDE CUTTING AND PATCHING AS REQUIRED AND WHERE NECESSARY TO ACCOMMODATE NEW WORK AND THE REPAIR OF EXISTING WORK.
18.	WHEN WORK INVOLVES CONTACT WITH MATERIALS CONTAINING ASBESTOS, PCB, OR OTHER TOXIC MATERIALS, NOTIFY OWNER, WHO WILL ESTABLISH PROCEDURES FOR REMEDIATION AND REMOVAL.
19.	CONTRACTOR SHALL SCHEDULE THE WORK UNDER THIS CONTRACT WITH WORK OF OTHER TRADES AS NOT TO DELAY THE OVERALL PROGRESS OF THE PROJECT.
20.	CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND PRIOR TO CUTTING OPENINGS.
21.	CONTRACTOR SHALL PROVIDE SHOP DRAWINGS PER SPECIFICATIONS PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND SYSTEMS INDICATED ON CONTRACT DOCUMENTS. PRIOR TO SUBMITTAL, CONTRACTOR SHALL VERIFY THAT ADEQUATE SPACE EXISTS FOR THE SUBMITTED EQUIPMENT. SHOP DRAWINGS MUST BE REVIEWED BY ARCHITECT/ENGINEER.
22.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY OTHER TRADES DUE TO SUBSTITUTION OF OTHER THAN SCHEDULED EQUIPMENT. WHEN EQUIPMENT FURNISHED IS DIFFERENT THAN INDICATED, THE COST OF ADDITIONAL ELECTRICAL SERVICE, STRUCTURAL AND RELATED WORK SHALL BE PAID BY THIS CONTRACTOR.
23.	ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE DONE IN ACCORDANCE WITH GOOD TRADE PRACTICE AND IN CONFORMANCE WITH APPLICABLE MANUFACTURERS' RECOMMENDATIONS.
24.	CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH DAY.
25.	RESTORE ALL SURFACES (WALLS, CEILINGS, FLOORS AND ROOFS) THAT ARE DAMAGED BY THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER.
26.	PRIOR TO EQUIPMENT STARTUP, CONTRACTOR SHALL PERFORM THE SPECIFIED STARTUP AND COMMISSIONING PROCEDURES.
27.	IN THE ABSENCE OF OTHER SPECIFIC INSTRUCTIONS, ALL WORK AND MATERIALS SUPPLIED SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THEIR ACCEPTANCE BY THE OWNER.
28.	BALA CONSULTING ENGINEERS, INC. (BALA) WILL PROVIDE CONTRACTOR WITH ELECTRONIC CADD FILES OF THE ENGINEERING DESIGNS FOR THE SOLE USE IN EXPEDITING SHOP DRAWINGS. BALA'S FILES SHALL NOT BE DIRECTLY COPIED AND ISSUED AS SHOP DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS. SHOULD THE SHOP DRAWINGS SUBMITTED PROVE TO BE A DIRECT COPY OF OUR FILES WITHOUT THE NECESSARY FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS, THESE SHOP DRAWINGS WILL BE RETURNED AS REJECTED. BALA'S ELECTRONIC FILES ARE CREATED IN AUTOCAD OR REVIT BASED ON THE PROJECT'S DOCUMENTATION REQUIREMENTS. BALA MAKES NO REPRESENTATION AS TO THE COMPATIBILITY OF THESE FILES WITH THE CONTRACTOR'S SOFTWARE OR THEIR SOFTWARE. DATA CONTAINED ON THESE ELECTRONIC FILES ARE PART OF BALA'S "INSTRUMENTS OF SERVICE" AND ARE COPYRIGHTED. CONTRACTOR'S USE OF FILES IS FOR THE SOLE PURPOSE AS A CONVENIENCE IN THE PREPARATION OF DRAWINGS FOR THE REFERENCED PROJECT. ANY OTHER USE OR REUSE BY CONTRACTOR IS UNLAWFUL.

RACEWAYS FOR AUDIOVISUAL SYSTEM CABLING	
1.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL RACEWAYS FOR AUDIOVISUAL WORK, (EXCEPT FOR HOOKS BY AV/C), (UNLESS OTHERWISE NOTED) INCLUDING CONDUITS WITH PULL STRINGS, FITTINGS, SURFACE RACEWAYS, BACK BOXES, UNISTRUT/THREADED ROD, OUTLET BOXES, FLOOR BOXES, CABLE TRAYS, LADDER RACKS, PULL BOXES, EXCAVATION, DEMOLITION CUTTING AND PATCHING, SEALING, ETC., REQUIRED FOR THE AV WORK. REFER TO THOSE RESPECTIVE TRADE DOCUMENTS FOR SPECIFIC REQUIREMENTS RELATED TO SIZES, ROUTING, LOCATIONS AND OTHER REQUIREMENTS UNLESS OTHERWISE NOTED.
2.	ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM WITH THE SPECIFICATIONS AS OUTLINED IN THE ELECTRICAL SPECIFICATIONS, THE CURRENT NATIONAL ELECTRIC CODE AND WITH ALL APPLICABLE LAWS, CODES, REGULATIONS, AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK.
3.	THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK REQUIREMENTS WITH THE AUDIOVISUAL INSTALLING CONTRACTORS.
4.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE ANY AND ALL ADDITIONAL LABOR AND MATERIALS PER THE AUDIOVISUAL DRAWINGS AND/OR CALLED FOR IN THEIR WRITTEN SPECIFICATIONS.

FIRESTOPPING	
1.	FIRESTOP SYSTEMS SHALL BE PROVIDED FOR ALL THROUGH PENETRATIONS OF AV CABLING, CONDUIT, SLEEVES, CABLE TRAYS, ETC., THROUGH FIRE-RATED WALLS AND FLOORS AND OTHER FIRE-RATED PARTITIONS. FIRESTOP SYSTEMS SHALL CONSIST OF MECHANICAL OR NON-MECHANICAL MATERIALS, OR COMBINATION OF MATERIALS, INSTALLED TO RETAIN THE INTEGRITY OF FIRE RESISTANCE RATED CONSTRUCTION BARRIERS.
2.	FIRESTOP SYSTEMS AND SOLUTIONS SHALL BE IN ACCORDANCE WITH NFPA 70: NATIONAL ELECTRIC CODE 2020 ARTICLES AND THE AUTHORITY HAVING JURISDICTION (AHJ).
3.	WHERE NON-MECHANICAL FIRESTOP SYSTEMS ARE UTILIZED, CONTRACTOR TO PROVIDE PRODUCTS THAT UPON CURING DO NO RELEASE DUST, DISOLVE, BREAKDOWN OR OTHERWISE DEGRADE OVER TIME FROM EXPOSURE TO ATMOSPHERIC MOISTURE, SWEATING PIPES, PONDING WATER, OR OTHER FORMS OF MOISTURE CHARACTERISTIC DURING OR AFTER CONSTRUCTION.
4.	ALL WALL PENETRATIONS FOR CABLE SHALL PASS THRU A METAL SLEEVE PROVIDED BY THE AV CONTRACTOR. FIRESTOP WHERE APPLICABLE.
5.	PROVIDE ONLY FIRESTOP PRODUCTS THAT HAVE BEEN TESTED FOR SPECIFIC FIRE RESISTANCE RATED CONSTRUCTION CONDITIONS CONFORMING TO CONSTRUCTION ASSEMBLY TYPE, PENETRATING ITEM TYPE, ANNULAR SPACE REQUIREMENTS, AND FIRE RATING INVOLVED FOR EACH SEPARATE INSTANCE.
6.	UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL CERTIFY THAT ALL THROUGH PENETRATIONS FOR AV CABLING HAVE BEEN SATISFACTORILY SEALED AND FIRESTOPPED.

CONTRACTOR AWARENESS	
CONTRACTORS ARE CAUTIONED TO READ, UNDERSTAND AND COMPLY WITH THE WRITTEN SPECIFICATIONS AND ALL CONTRACT DRAWINGS FOR THIS PROJECT. IF ANY DISCREPANCY IS NOTICED BETWEEN THE DRAWINGS AND WRITTEN SPECIFICATIONS, THE CONTRACTOR SHALL BRING IT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO SUBMITTING THEIR BID. THE BID PRICE SHALL BE BASED ON THE HIGHER QUALITY, QUANTITY OR PRICE OF ANY DISCREPANCY WHICH HAS NOT BEEN SETTLED PRIOR TO THE BID DATE. NO ADDITIONAL COMPENSATION SHALL BE APPROVED IF THE CONTRACTOR FAILS TO NOTIFY THE ARCHITECT AND ENGINEER.	

AUDIOVISUAL GENERAL NOTES	
1.	AVC SHALL BE RESPONSIBLE FOR PROVIDING ALL SPEAKER BAFFLES, SUPPORT FRAMES AND CONNECTIVITY FOR SPEAKER ENCLOSURES.
2.	AVC SHALL COORDINATE WITH OTHER TRADES FOR INSTALLATION OF ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO RACKS, SPEAKERS, AND WIRE SUPPORT.
3.	AVC SHALL INSTALL CABLE SUPPORT FOR ALL HORIZONTAL CABLE. CABLE SHALL NOT BE PLACED TO REST ON CEILINGS, WATER PIPES, HEATING PIPES OR ELECTRICAL LINES.

MOUNTING HEIGHT NOTES	
1.	COORDINATE ALL AV DEVICE LOCATIONS PERTAINING TO WALL ELEVATION AFF. REFER TO ARCHITECT DRAWINGS FOR MOUNTING REQUIREMENTS.
2.	ALL DEVICES SHOWN ON DRAWINGS ARE DIAGRAMMATIC IN LOCATION AND SHOWN FOR GENERAL WIRING PURPOSES ONLY. UNLESS OTHERWISE NOTED, ALL DEVICES INDICATED TO BE INSTALLED IN THE SAME LOCATIONS WITH DIFFERENT ELEVATIONS SHALL BE ALIGNED VERTICALLY AND HORIZONTALLY. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS.

INSTALLATION GUIDELINES	
1.	PROVIDE ALL NECESSARY CABLE, SUPPORTS AND HARDWARE FOR A COMPLETE AND OPERABLE AUDIOVISUAL SYSTEM. OBSERVE ALL MANUFACTURER INSTALLATION GUIDELINES INCLUDING: <ul style="list-style-type: none"><li>• TERMINATION POSITION/JACKET REMOVAL</li><li>• RECOMMENDED PULLING TENSIONS</li><li>• BEND RADIUS FOR CABLE</li></ul>
2.	COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR, CLIENT REPRESENTATIVES AND ADHERE TO THE PROJECT SCHEDULE. IF THERE WILL BE WORK CONDUCTED OUT OF SEQUENCE, INCLUDE ALL "OFF HOURS" WORK WITHIN FINAL PRICING.
NATIONAL FIRE PROTECTION AGENCY	
NATIONAL ELECTRIC CODE NFPA 70, ARTICLES: <ul style="list-style-type: none"><li>• 250 GROUNDING</li><li>• 800 TELECOMMUNICATIONS CIRCUITS AND SYSTEMS</li><li>• 820 COMMUNITY ANTENNA TELEVISION AND RADIO DISTRIBUTION SYSTEMS</li></ul>	

TECHNOLOGY DOCUMENTATION SCOPE					
SCOPE AREA	ARCHITECTURE	E SERIES	T SERIES	TA SERIES	SC SERIES
IT RISER CONDUIT	RISER CAVITY DOCUMENTED ON BASE BUILDING SET	SHOWN FOR SCOPE ON BASE BUILDING SET	SHOWN FOR COORDINATION	N/A	N/A
IT, AV, SEC CLOSET/ ROOM POWER	NOT SHOWN	SHOWN FOR SCOPE	SHOWN FOR COORDINATION	SHOWN FOR COORDINATION	SHOWN FOR COORDINATION
IT, AV, SEC CLOSET WALL BOARD	NOT SHOWN	NOT SHOWN	SHOWN FOR SCOPE	SHOWN FOR SCOPE	SHOWN FOR SCOPE
AV & SECURITY FIELD DEVICE POWER FLOOR BOXES / POKE THRU'S	SHOWN FOR LOCATION COORDINATION	SHOWN FOR SCOPE (DEVICE TYPE, CONDUIT & CIRCUITING)	N/A	SHOWN FOR COORDINATION	SHOWN FOR COORDINATION
AV IN-WALL BOXES	SHOWN FOR HORIZONTAL LOCATION COORDINATION	SHOWN FOR CIRCUITING	SHOWN FOR DATA CABLING	SHOWN FOR VERTICAL LOCATION AND AV CABLING	N/A
AV, IT, SEC LOW VOLTAGE CONDUIT	NOT SHOWN	SHOWN FOR CONDUIT SCOPE	SHOWN FOR DATA CABLING	SHOWN FOR AV CABLING	SHOWN FOR SECURITY CABLING AND CONDUIT SCOPE
AV, FIELD DEVICE DATA	NOT SHOWN	N/A	SHOWN FOR DATA CABLING	SHOWN FOR COORDINATION	N/A
SECURITY CAMERA FIELD DEVICE DATA	NOT SHOWN	N/A	SHOWN FOR DATA CABLING	N/A	SHOWN FOR COORDINATION
AV DISPLAY WALL BLOCKING	SHOWN FOR LOCATION COORDINATION OR REFER TO AV SET	N/A	N/A	SHOWN FOR SCOPE	N/A

REVISION LEGEND		NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
DRAWING LIST - AUDIOVISUAL		NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
DRAWING NUMBER	DRAWING TITLE	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA0.01	AUDIOVISUAL LEGENDS, ABBREVIATIONS, AND GENERAL NOTES	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA0.02	AUDIOVISUAL - SYMBOL LEGEND	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA0.03	AUDIOVISUAL - DETAILS	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA2.00L	AUDIOVISUAL - LOWER LEVEL PLAN	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA2.01	AUDIOVISUAL - LEVEL ONE PLAN	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.01	AUDIOVISUAL - ENLARGED PLANS - FIRST FLOOR LOBBY	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.02	AUDIOVISUAL - ENLARGED PLANS - STUDENT LOUNGE	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.03	AUDIOVISUAL - ENLARGED PLANS - ELEVATOR LOBBY	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.04	AUDIOVISUAL - ENLARGED PLANS - OFFICE - ADD ALT #1	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.05	AUDIOVISUAL - ENLARGED PLANS - SEMINAR	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.06	AUDIOVISUAL - ENLARGED PLANS - CLASSROOM G18/G19	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.07	AUDIOVISUAL - ENLARGED PLANS - LARGE CLASSROOM G25	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.08	AUDIOVISUAL - ENLARGED PLANS - CETL LEARNING STUDIO	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.09	AUDIOVISUAL - ENLARGED PLANS - SMALL GROUP STUDY - ADD ALT #1	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.10	AUDIOVISUAL - ENLARGED PLANS - LARGE GROUP STUDY - ADD ALT #1	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.11	AUDIOVISUAL - ENLARGED PLANS - CETL SEMINAR ROOM	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.12	AUDIOVISUAL - ENLARGED PLANS - CLASSROOM G26	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.13	AUDIOVISUAL - ENLARGED PLANS - MENTORING CENTER	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED
TA6.14	AUDIOVISUAL - ENLARGED PLANS - CLASSROOM G15/G16	NEW ISSUE	REVISED ISSUE	REVISED, NOT ISSUED

LEAVE OPEN FOR NJ DCA STAMP OF APPROVAL  
THIS SPACE IS RESERVED FOR NJDCA'S ELECTRONIC RELEASE STAMPS. THIS IS TO REMAIN COMPLETELY BLANK. BOX DIMENSIONS IS 3" WIDTH BY 3" HEIGHT.

**NORR**  
One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

PRELIMINARY FOR REVIEW ONLY  
THESE DOCUMENTS ARE FOR DESIGN REVIEW AND ARE NOT INTENDED FOR BIDDING PERMIT SUBMISSION CONSTRUCTION

CLIENT:  
THE COLLEGE OF NEW JERSEY  
2000 PENNINGTON ROAD  
EWING, NJ

PROJECT TEAM  
**BALA ENGINEERS**  
PRINCIPAL ARCHITECT: JOHN VON BROCKHOFF, BALDWIN, THORNE, HARRINGTON, PC  
MECHANICAL / ELECTRICAL / PLUMBING / FIRE PROTECTION  
STRUCTURAL / TECHNOLOGY / COMMUNICATIONS  
1300 DRUMHURST LANE, SUITE 200, WARREN, NJ 07057-1000  
www.bala.com

**ROScoe HALL LOWER LEVEL INTERIOR RENOVATION**  
2000 PENNINGTON ROAD EWING, NJ  
THE COLLEGE OF NEW JERSEY

**PROJECT NORTH**





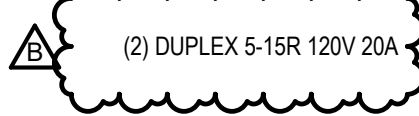





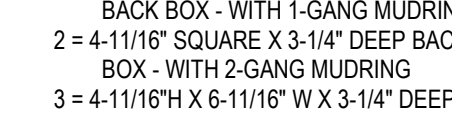



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2	2024.05.16	85% CONSTRUCTION DOCUMENT REVIEW	TA0.01
3	2024.05.16	100% CDH ISSUED FOR PERMIT	TA0.01
4	2024.07.26	ISSUED FOR BID	TA0.01
5	2024.08.26	ADENDUM A - ISSUE FOR CONSTRUCTION	TA0.01
6	2024.12.10	AV, IT, S ADENDUM A	TA0.01
7	2024.12.16	BULLETIN 1	TA0.01

NJDCA REF NUMBER: 22031600  
PROJECT NUMBER: 22031600  
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SHEET TITLE:  
**AUDIOVISUAL LEGENDS, ABBREVIATIONS, AND GENERAL NOTES**

SHEET NUMBER:  
**TA0.01**



AUDIOVISUAL SYMBOLS								
SYMBOL	DESCRIPTION	CABLE TYPE & QUANTITY	BACK BOX(UNDER GC SCOPE UON)	DEDICATED AV CONDUIT/PATHWAY	DEDICATED AV POWER	DEDICATED AV DATA	TYPICAL BACK BOX CENTERLINE MOUNTING HEIGHT FROM FINISHED FLOOR	NOTES
	CEILING MOUNTED INFRARED ASSISTIVE LISTENING EMITTER	(1) SHIELDED 20/2 AWG TYPE CMP (1) 18/2 AWG TYPE CMP	HARD CEILING - SINGLE GANG ACT CEILING - N/A	HARD CEILING - (1) 1-1/4" EMT TO ACCESSIBLE CEILING ACT CEILING - N/A	N/A	N/A	CEILING	
	WALL MOUNTED INFRARED ASSISTIVE LISTENING EMITTER	(1) SHIELDED 20/2 AWG TYPE CMP (1) 18/2 AWG TYPE CMP	4-11/16" SQUARE X 3-1/4" DEEP BACK BOX - WITH 1-GANG MUDRING	(1) 1-1/4" EMT TO ACCESSIBLE CEILING	N/A	N/A	86" AFF	
	POKE THRU	(#) CATEGORY 6 UTP	SEE ELECTRICAL DRAWINGS	(1) 1-1/4" EMT, SHARED WITH TELCOM CABLES, TO DISPLAY BACKBOX OR ACCESSIBLE CEILING PER AV ELEVATIONS	(1) DUPLEX 5-15R 120V 20A	# INDICATES AV DATA CABLING COUNTS - REFER TO TA-BXX SERIES ENLARGED PLANS	FLOOR	
	DISPLAY IN-WALL BOX, % INDICATED TYPE 1 = CHIEF PAC301 6 = CHIEF PAC329FW 7 = CHIEF PAC327F S = SPECIAL	1 = (2) CATEGORY 6 UTP 6 = (2) CATEGORY 6 UTP 7 = (2) CATEGORY 6 UTP S = (2) CATEGORY 6 UTP	1 = PROVIDED BY EC 6 = PROVIDED BY EC 7 = PROVIDED BY EC S = SUPPLIED BY AVC, INSTALLED BY EC	REFER TO TA 6 XX SERIES DISPLAY WALL ELEVATIONS		# INDICATES AV DATA CABLING COUNTS - REFER TO TA-BXX SERIES ENLARGED PLANS	CL OF DISPLAY, SEE INDIVIDUAL ELEVATION	INCLUDE WHITE TRIM RING AND COVER FOR ALL PAC329F AND PAC327F IN WALL BOXES
	SPEAKER, CEILING MOUNTED	(1) 18/2 AWG TYPE CMP FROM RACK/VOLUME CONTROL (1) 18/2 AWG TYPE CMP TO NEXT SPEAKER	N/A	N/A	N/A	N/A	CEILING	MOUNT WITH ACT BRIDGE OR PRE-CONSTRUCTION MUD-IN RING PER CEILING TYPE
	WALL MOUNTED TOUCHPANEL, % INDICATES SIZE 7 = 7" 1 = 10"	(1) CATEGORY 6 TYPE CMP	4-11/16" SQUARE X 3-1/4" DEEP BACKBOX - WITH 2-GANG/1-GANG MUDRING	1-1/4" EC TO ACCESSIBLE CEILING	N/A	1	45" AFF	
	COUNTERTOP/ SURFACE TOUCHPANEL, % INDICATES SIZE 7 = 7" 1 = 10"	(1) CATEGORY 6 UTP	N/A	N/A	N/A	1	N/A	REQUIRES 1-1/4" GROMMET OR TABLE HATCH PENETRATION IN TABLE SURFACE
	AV WALL PLATE, % INDICATES SIZE: 1 = SINGLE-GANG 2 = DOUBLE-GANG 3 = TRIPLE-GANG 4 = QUAD-GANG 12 = 12"x12" SQUARE	REFER TO INDIVIDUAL SIGNAL FLOW DIAGRAMS	1 = 4-11/16" SQUARE X 3-1/4" DEEP BACK BOX - WITH 1-GANG MUDRING 2 = 4-11/16" SQUARE X 3-1/4" DEEP BACK BOX - WITH 2-GANG MUDRING 3 = 4-11/16"H X 6-11/16" W X 3-1/4" DEEP BACK BOX - WITH 3-GANG MUDRING 4 = 4-11/16"H X 6-11/16"W X 3-1/4" DEEP BACK BOX - WITH 4-GANG MUDRING 12 = 12"x12" BACK BOX	1-1/4" EC TO ACCESSIBLE CEILING	N/A	N/A	# INDICATES CUSTOM HEIGHT, OTHERWISE PROJECT RECEPTACLE HEIGHT	
	WALL MOUNTED BUTTON PANEL	(1) CATEGORY 6 TYPE CMP REFER TO INDIVIDUAL SIGNAL FLOW DIAGRAMS		1-1/4" EC TO ACCESSIBLE CEILING	N/A	N/A	PROJECT SWITCH HEIGHT	
	BLUETOOTH WALL PLATE	(1) CATEGORY 6 TYPE CMP	4-11/16" SQUARE X 3-1/4" DEEP BACKBOX - WITH 1-GANG MUDRING	1-1/4" EC TO ACCESSIBLE CEILING	N/A	N/A	PROJECT SWITCH HEIGHT	
	CEILING MICROPHONE ARRAY	(2) CATEGORY 6 TYPE CMP	N/A	N/A	N/A	1	CEILING	
	PRESENTATION CAMERA, % INDICATES TYPE IW = IN-WALL MOUNTED W = WALL MOUNTED D = DISPLAY MOUNTED C = CEILING MOUNTED		IW = CUSTOM CAMERA BOX W = 4-11/16" SQUARE X 3-1/4" DEEP BACKBOX - WITH 2-GANG MUDRING D = N/A C = SEE DETAILS	IW = 1 1/4" EC TO DISPLAY BOX OR ACCESSIBLE CEILING W = 1-1/4" EC TO DISPLAY BOX OR ACCESSIBLE CEILING D = N/A C = 1-1/4" EC TO ACCESSIBLE CEILING / SEE DETAILS	N/A	N/A	IW = SEE INDIVIDUAL ELEVATIONS W = SEE INDIVIDUAL ELEVATIONS D = ABOVE OR BELOW DISPLAY - SEE INDIVIDUAL ELEVATIONS C = CEILING	

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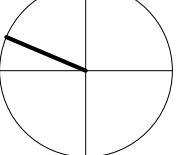
ENGINEERS

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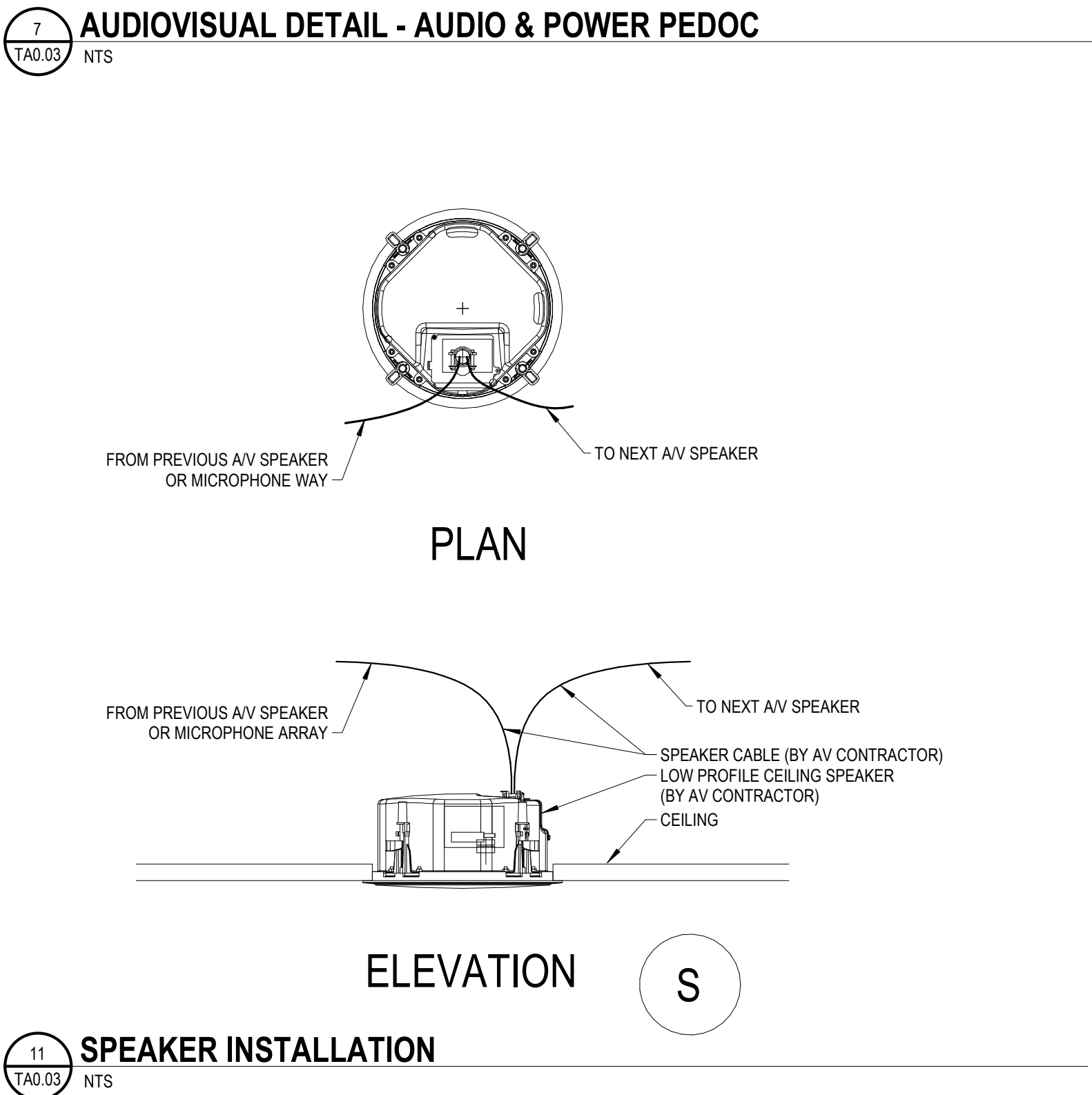
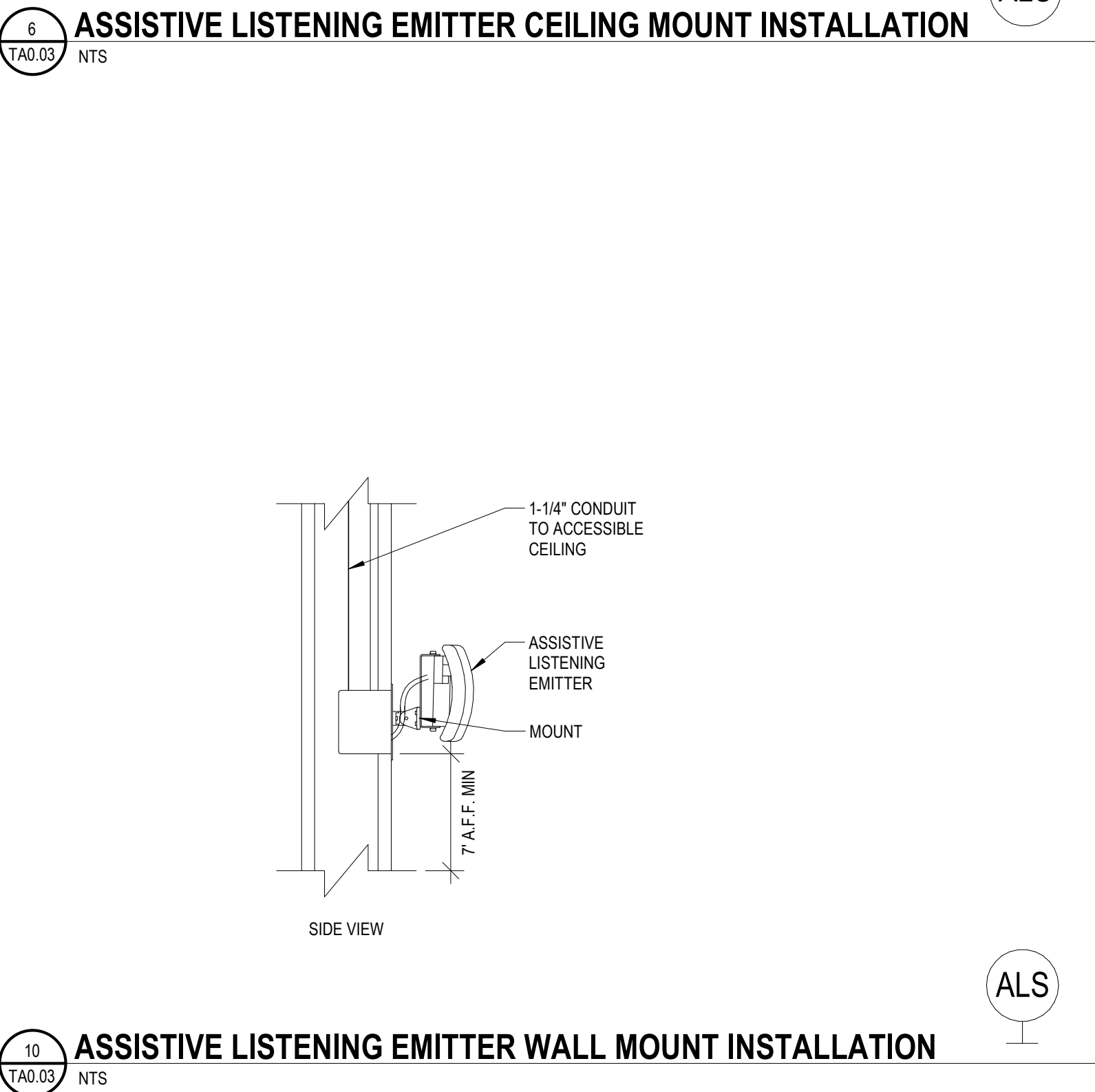
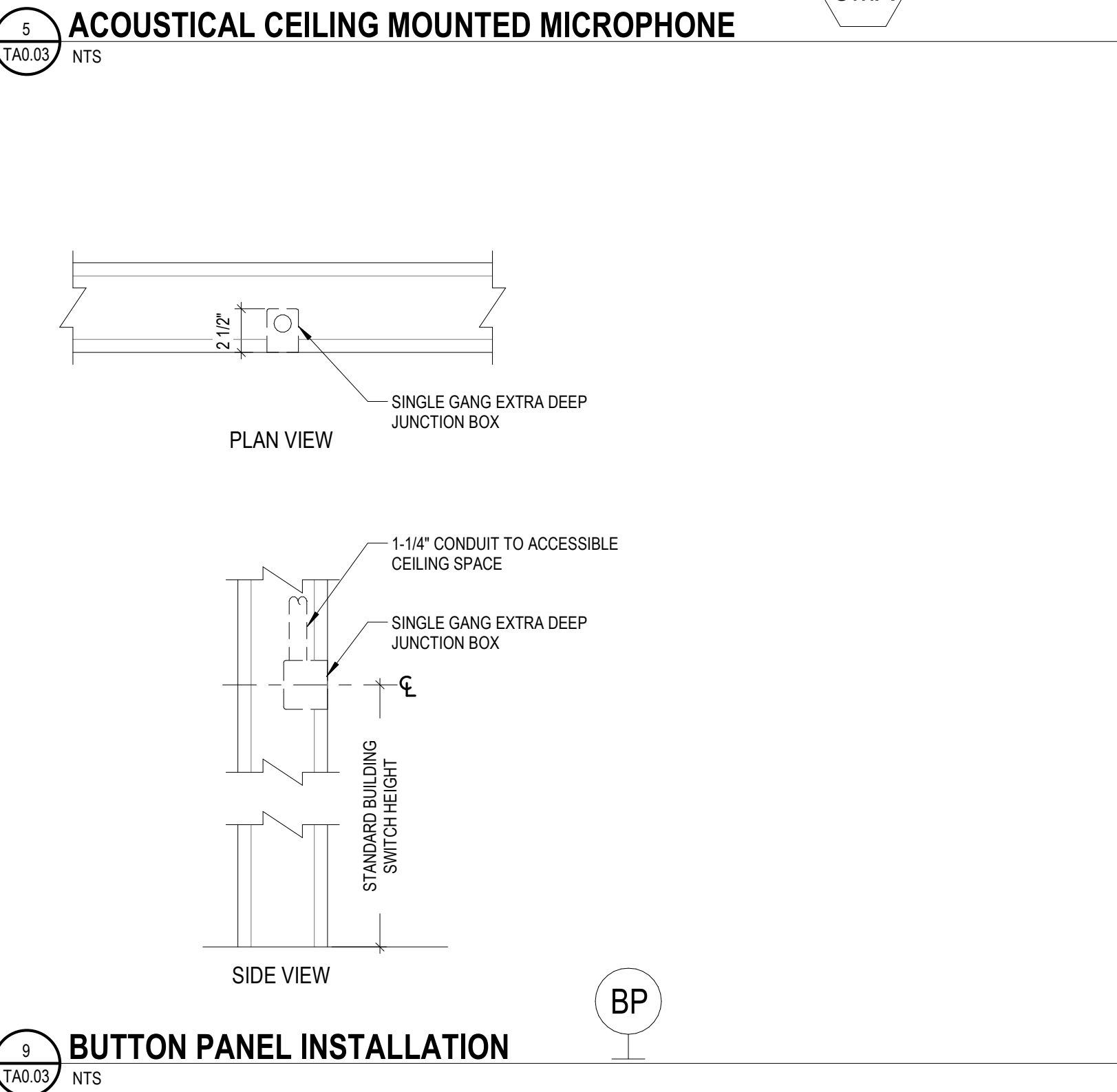
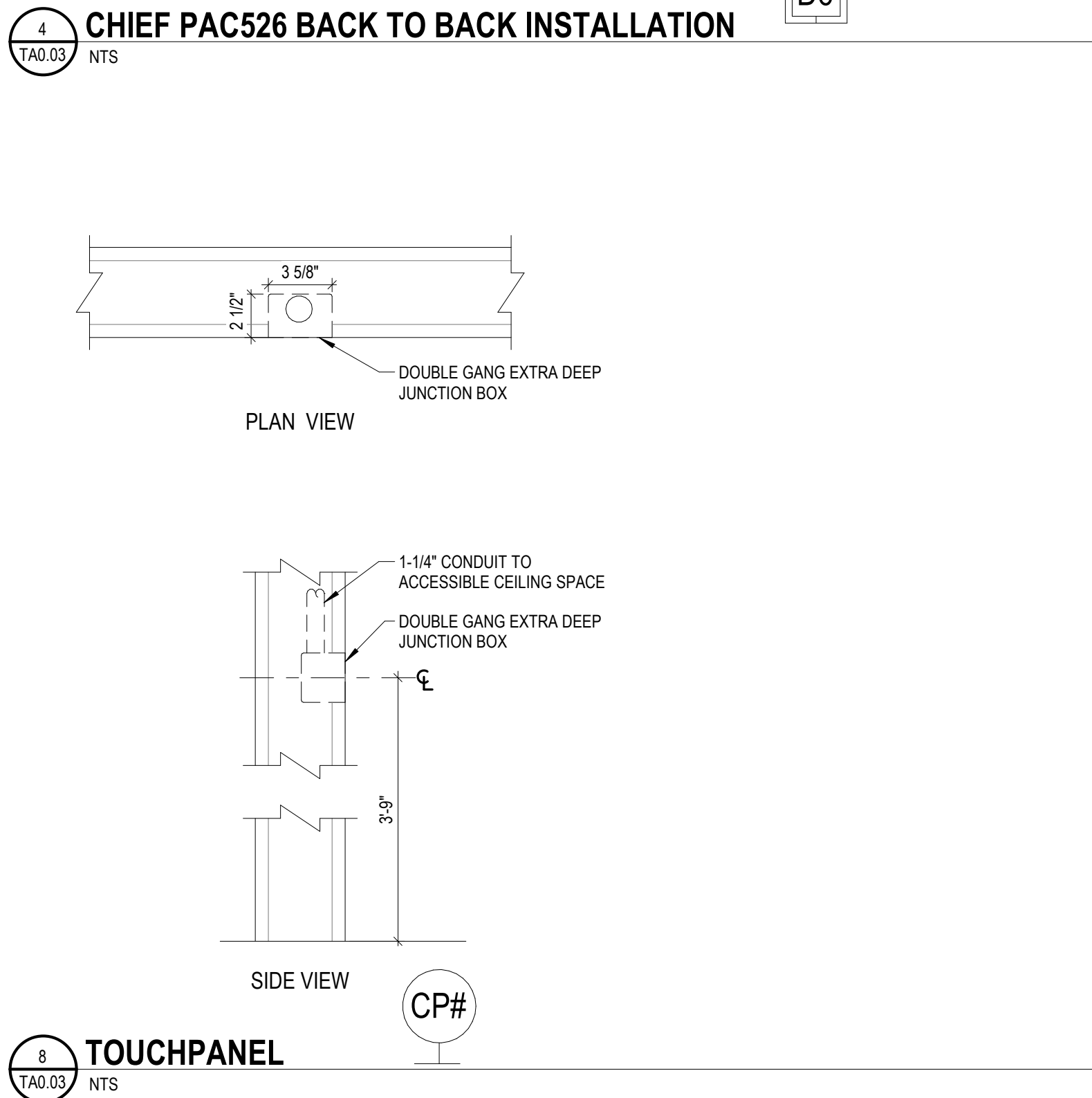
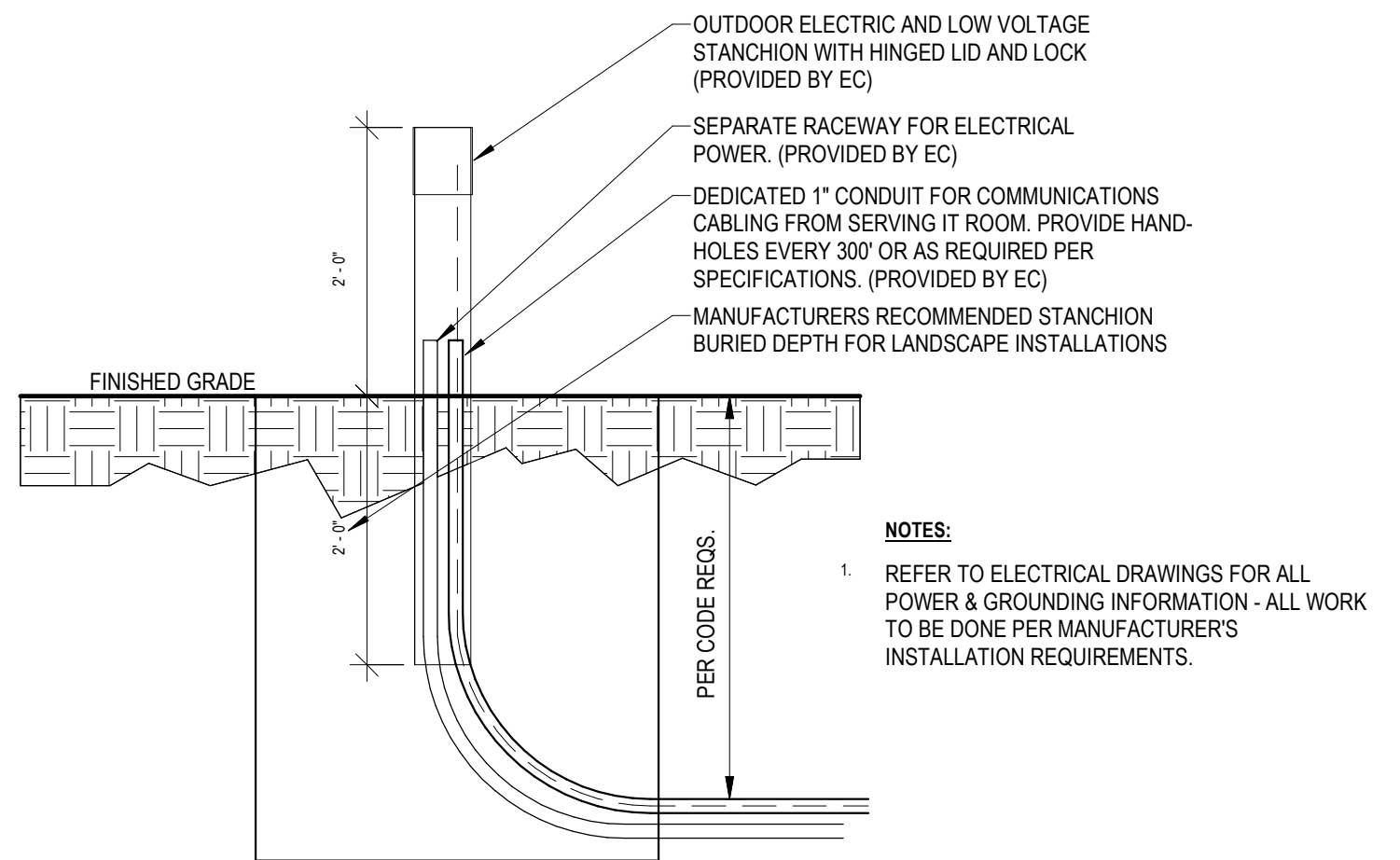
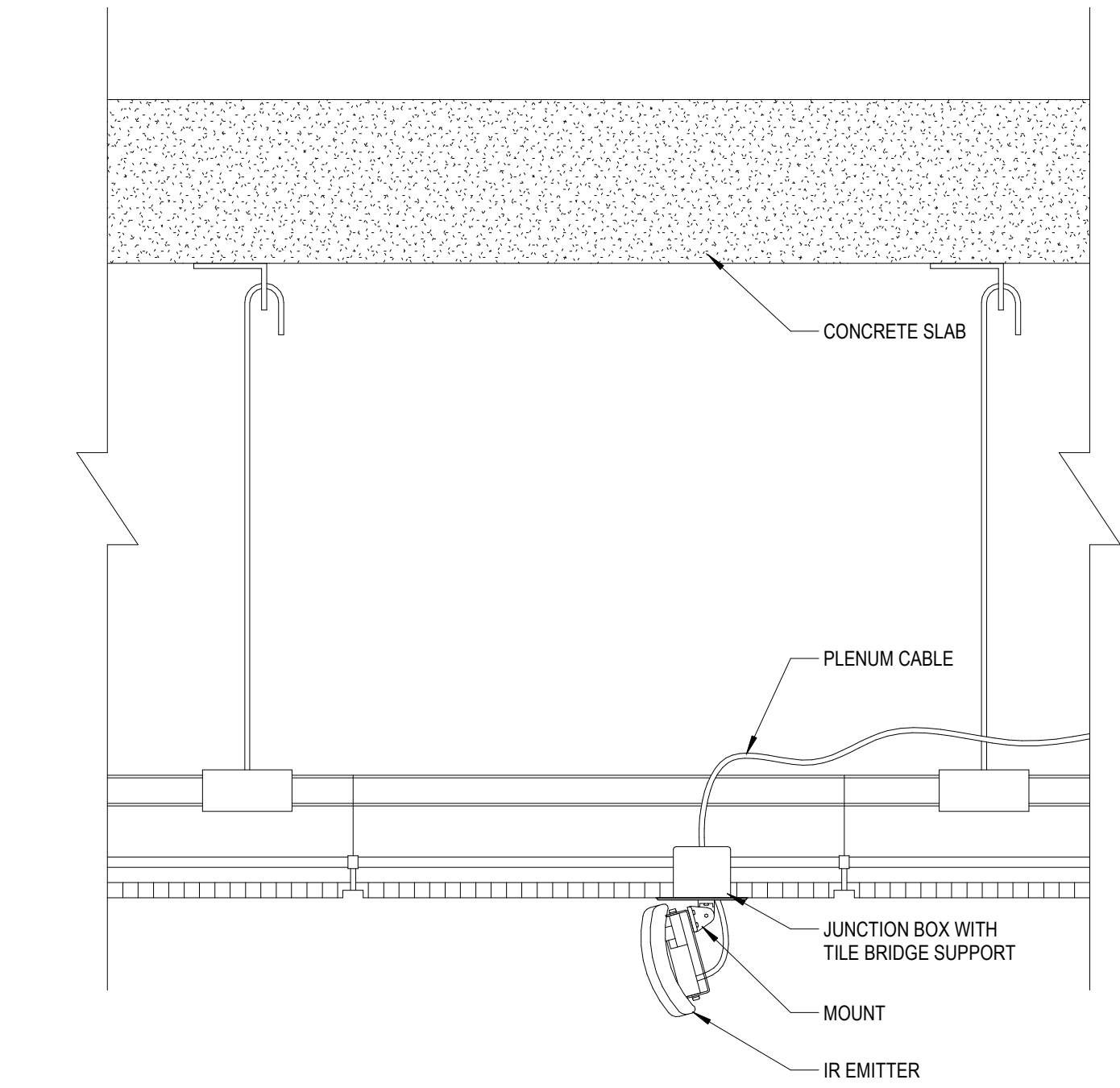
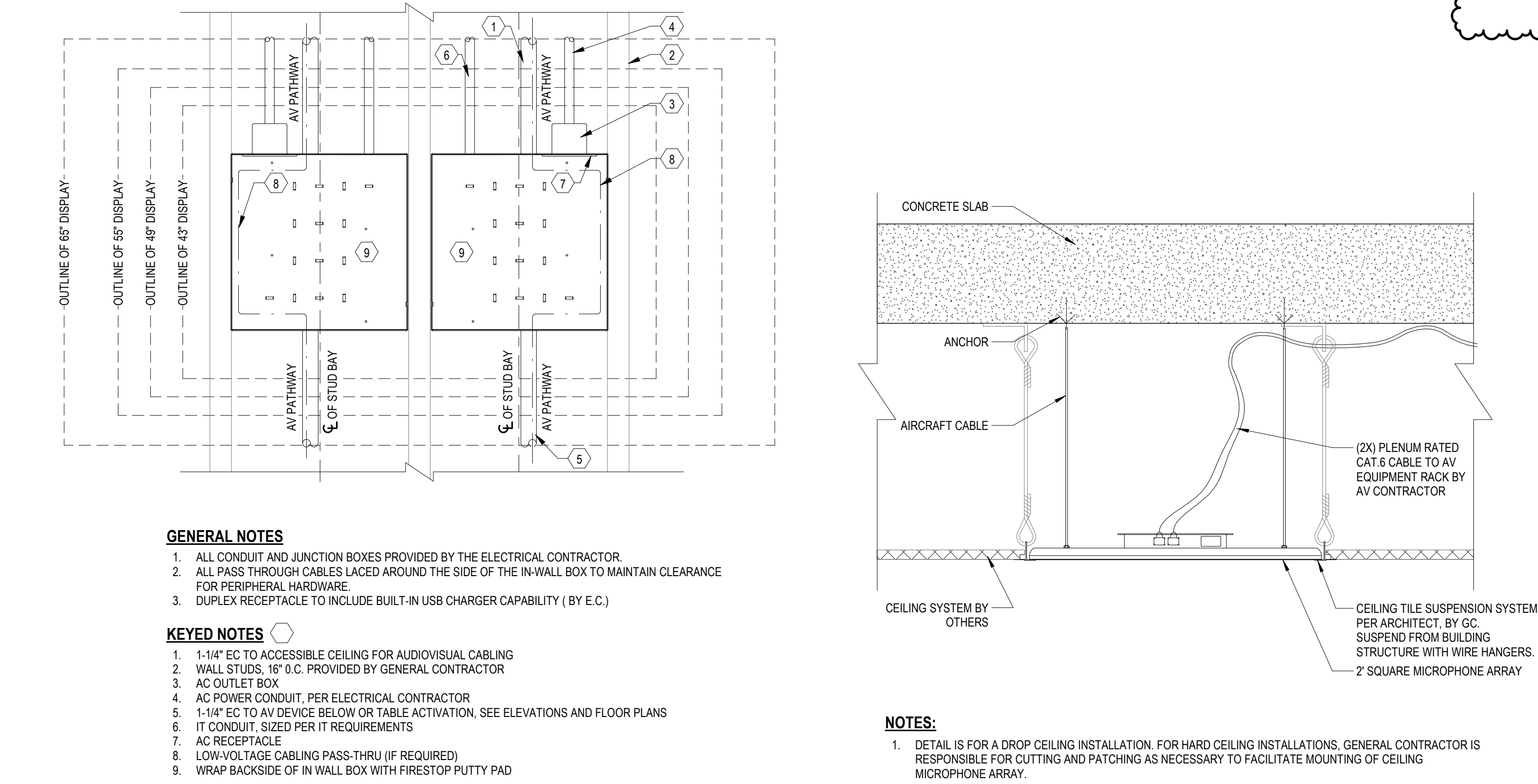
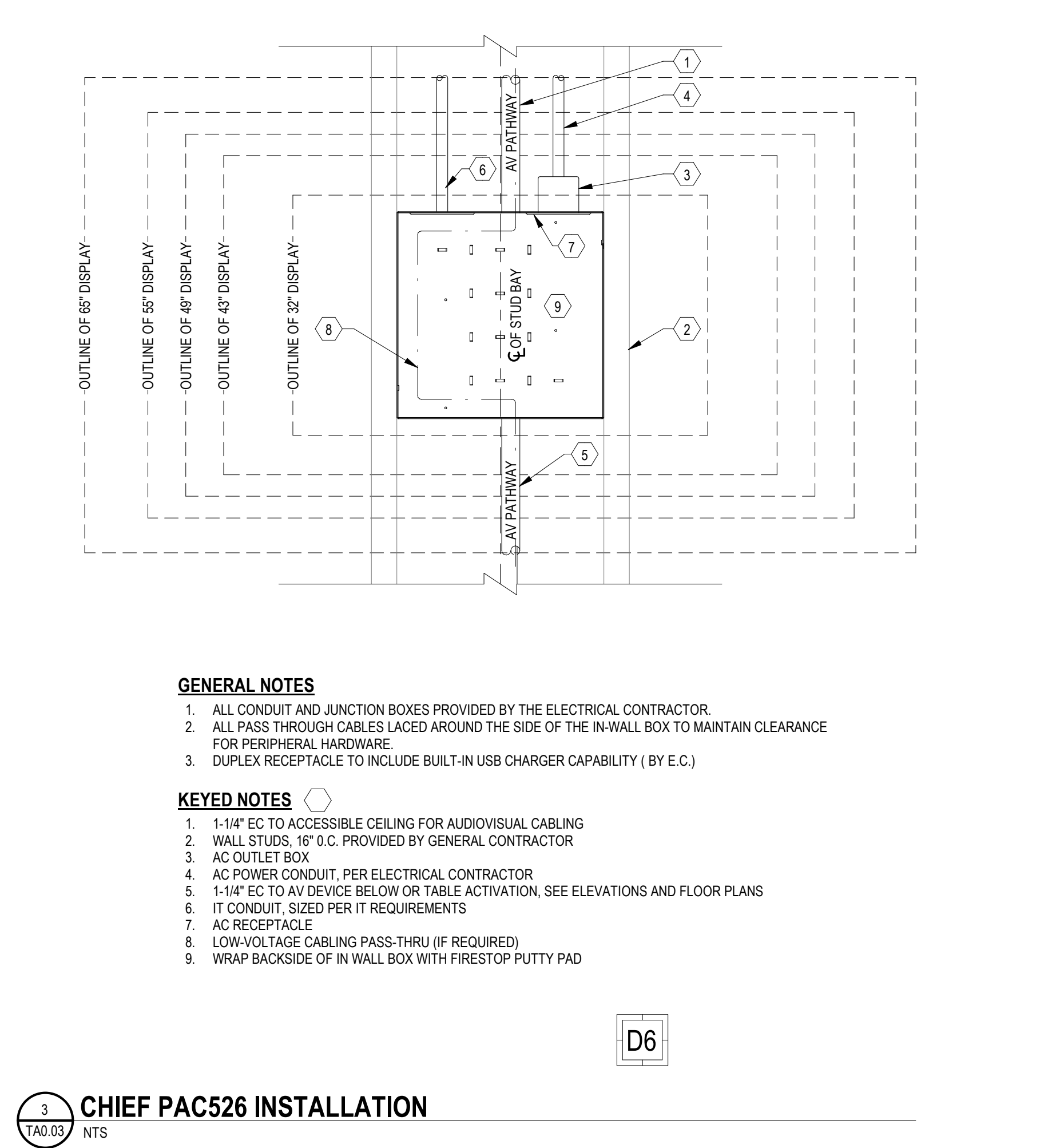
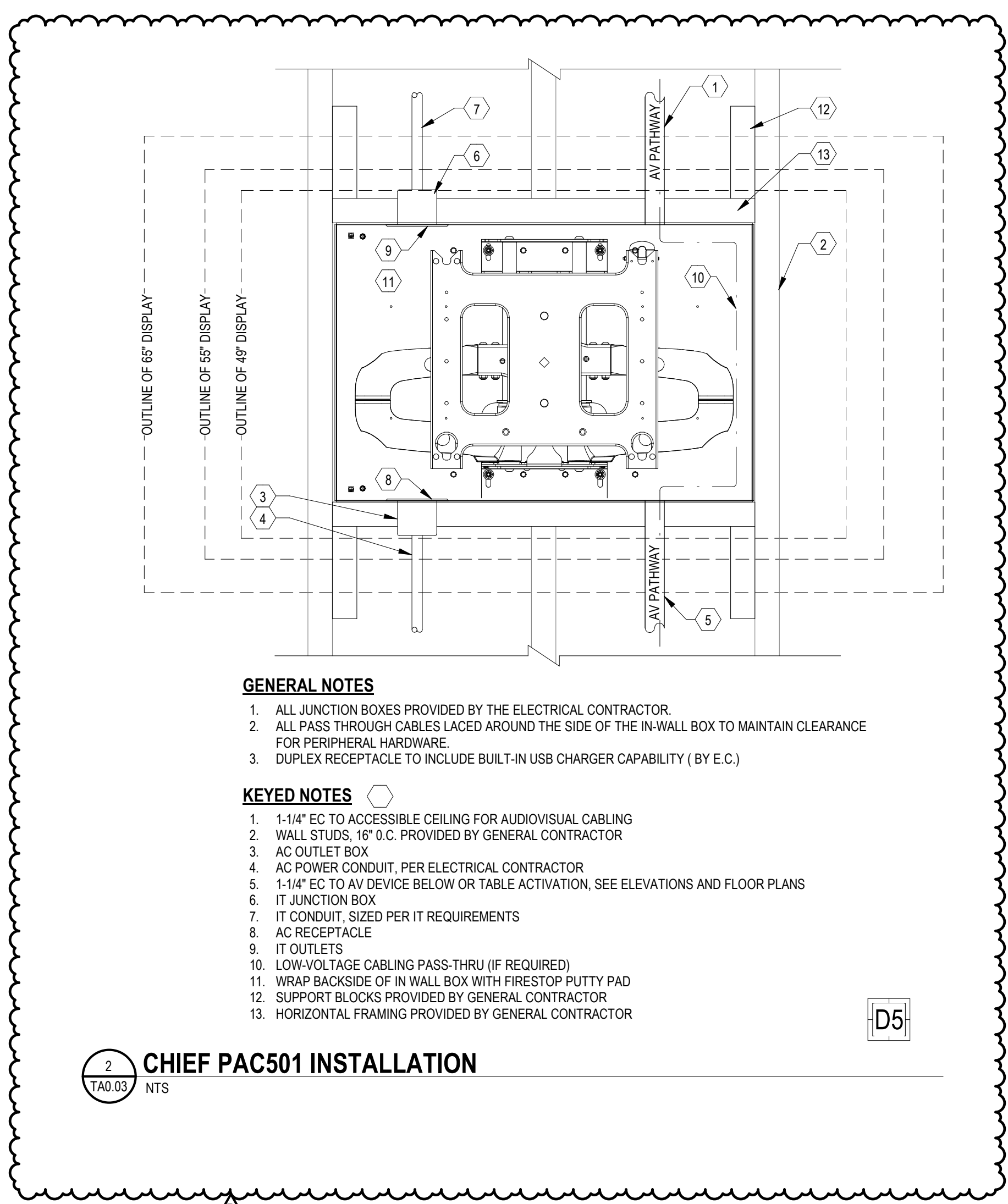
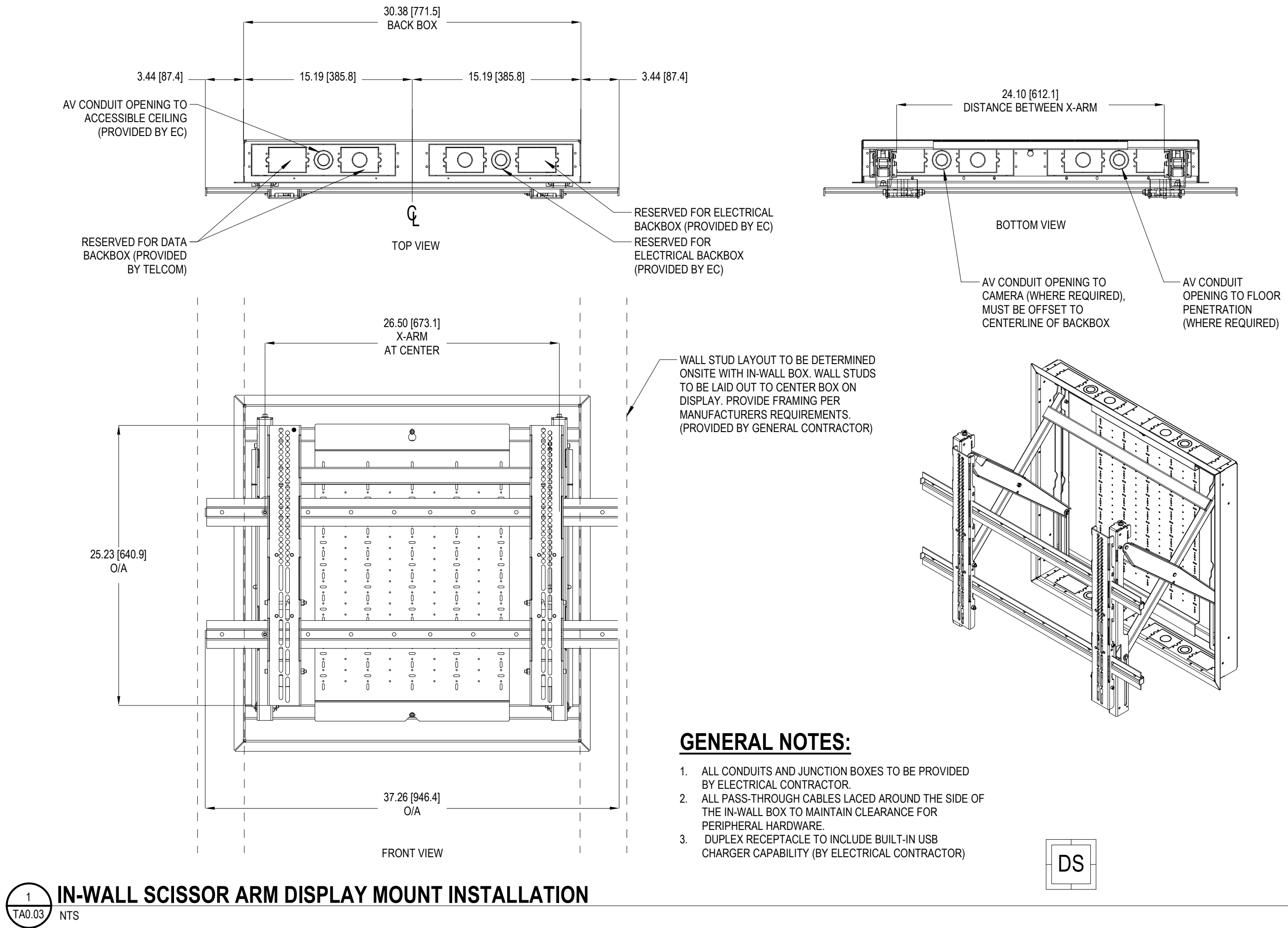
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NJDCA REF NUMBER: **22031600**  
PROJECT NUMBER: **22031600**  
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SHEET TITLE:  
**AUDIOVISUAL -  
SYMBOL  
LEGEND**

SHEET NUMBER:  
**TA0.02**





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3	2024.06.21	100% CD/ISSUED FOR PERMIT	3	3
4	2024.07.26	ISSUED FOR BID	4	4
5	2024.08.26	ADDITIONAL ISSUE FOR CONSTRUCTION	5	5
6	2024.09.23	ADDITIONAL ISSUE FOR CONSTRUCTION	6	6

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**AUDIOVISUAL -  
DETAILS**

SHEET NUMBER  
**TA0.03**





- SHEET NUMBER:  
**TA2.00L**

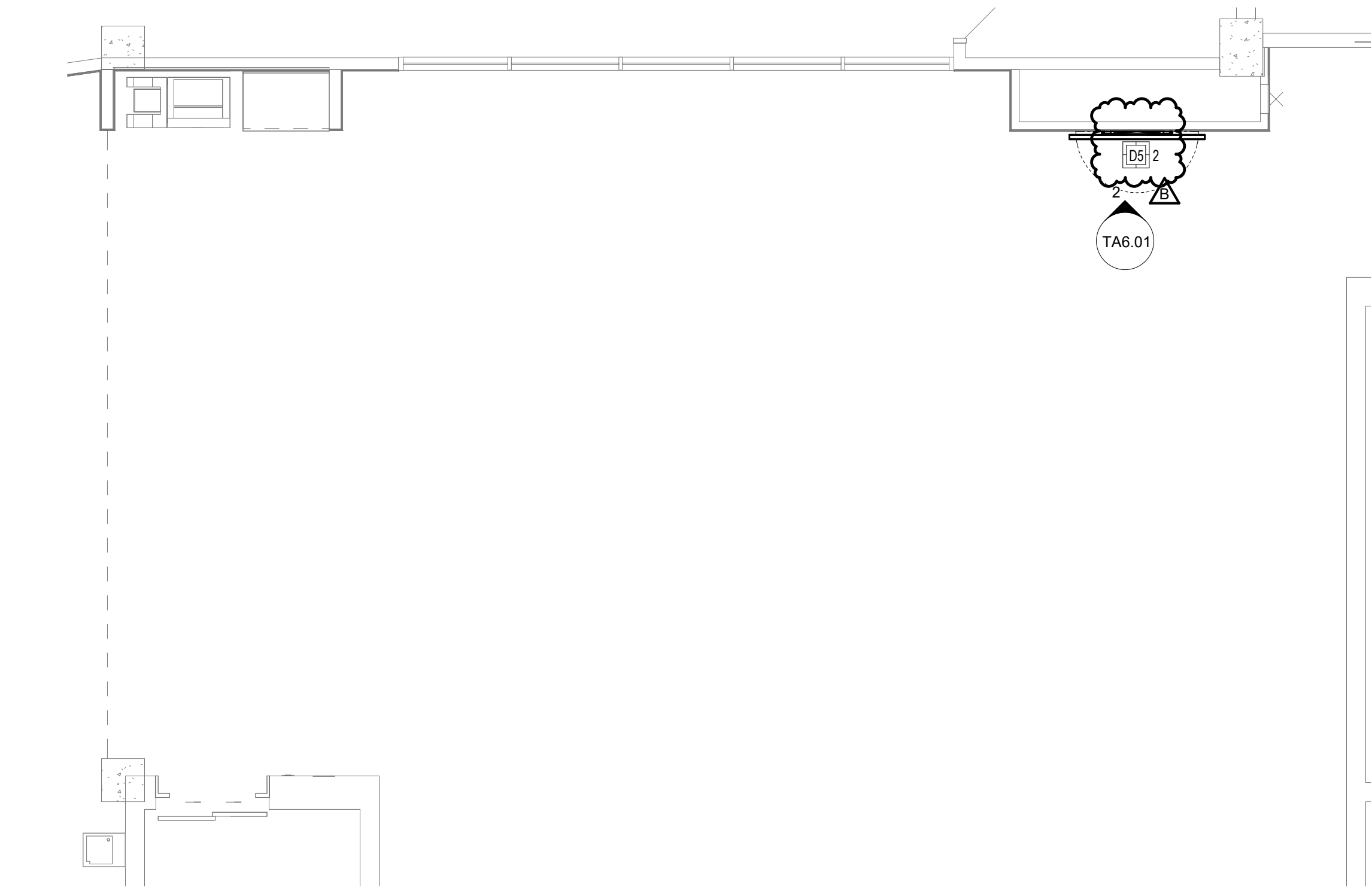




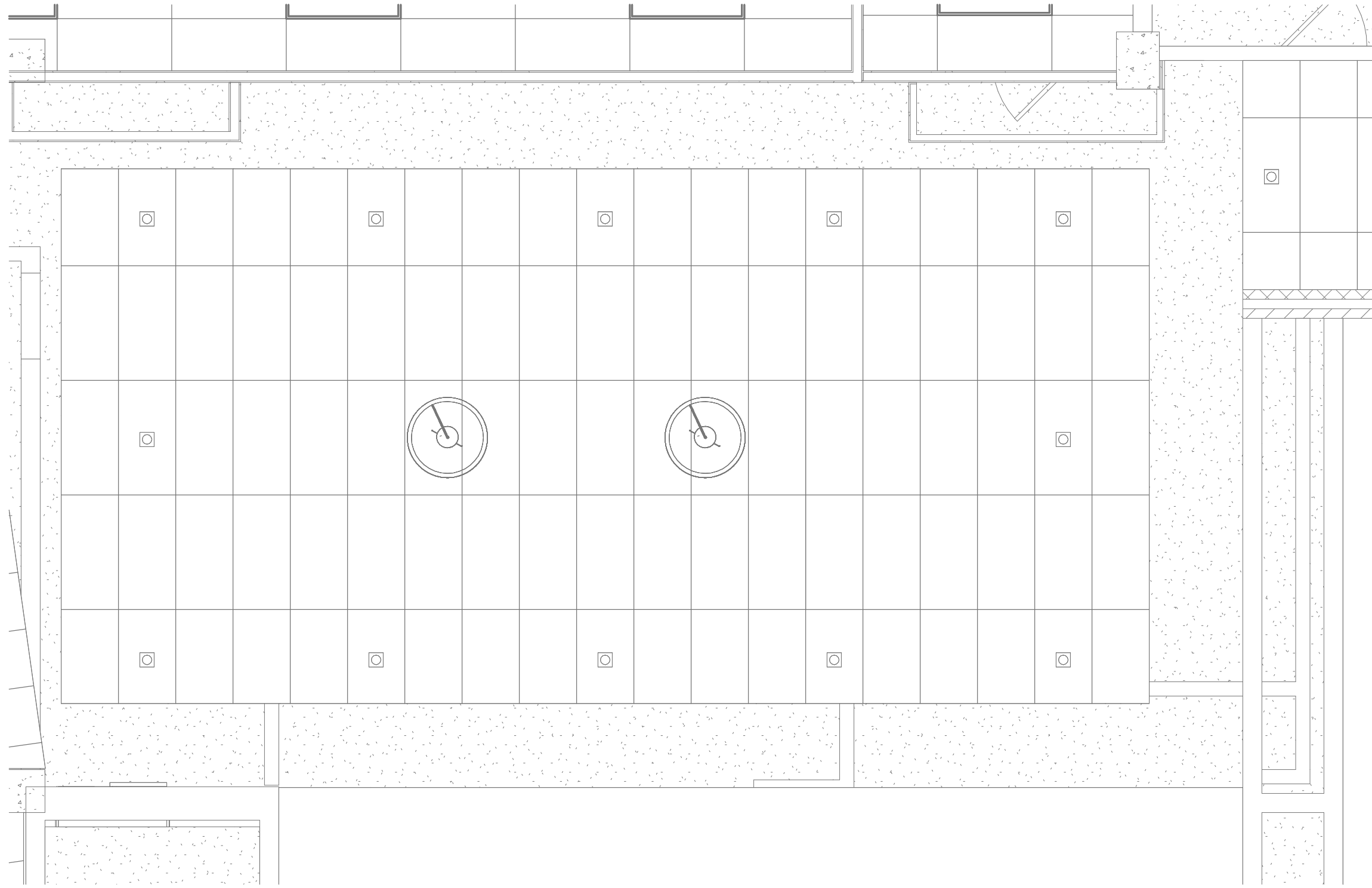
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# GA2.01

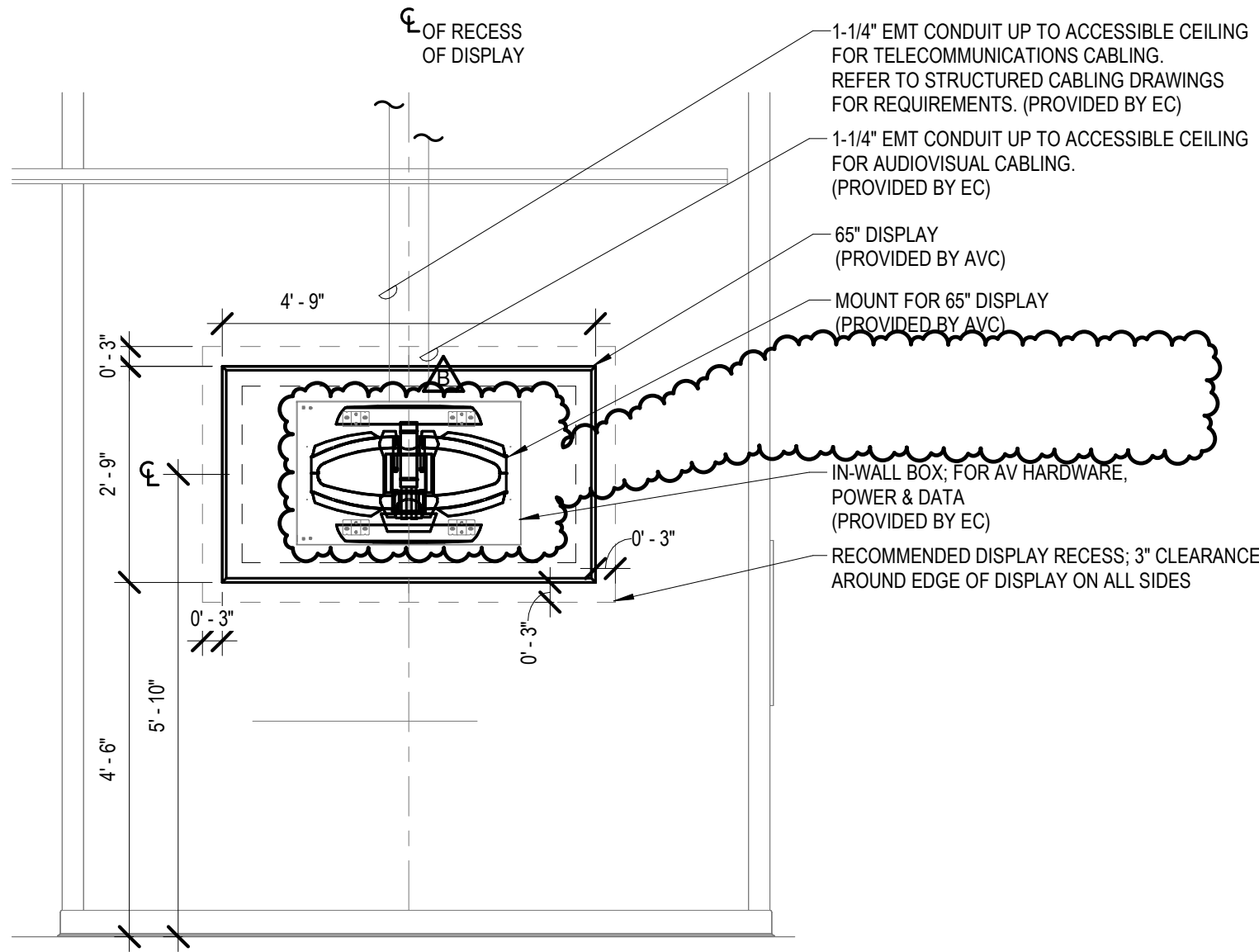




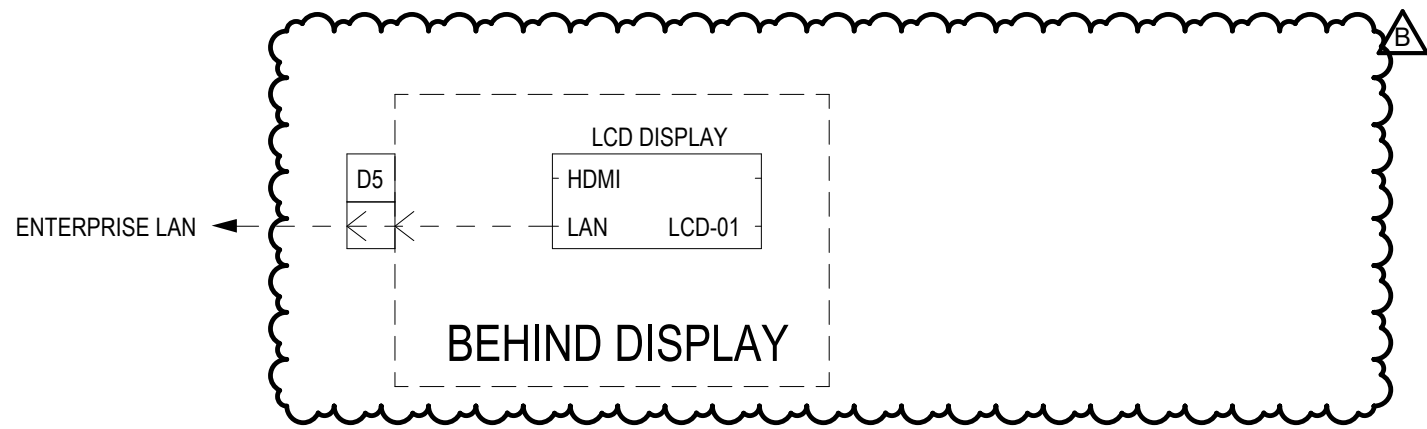
1 AUDIOVISUAL - ENLARGED PLAN - FIRST FLOOR LOBBY  
1/4" = 1'-0"



3 AUDIOVISUAL - ENLARGED RCP - FIRST FLOOR LOBBY  
1/4" = 1'-0"  
NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



2 AUDIOVISUAL - ELEVATION - FIRST FLOOR LOBBY DISPLAY  
1/2" = 1'-0"  
NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL SYSTEM DIAGRAM - FIRST FLOOR LOBBY  
NONE

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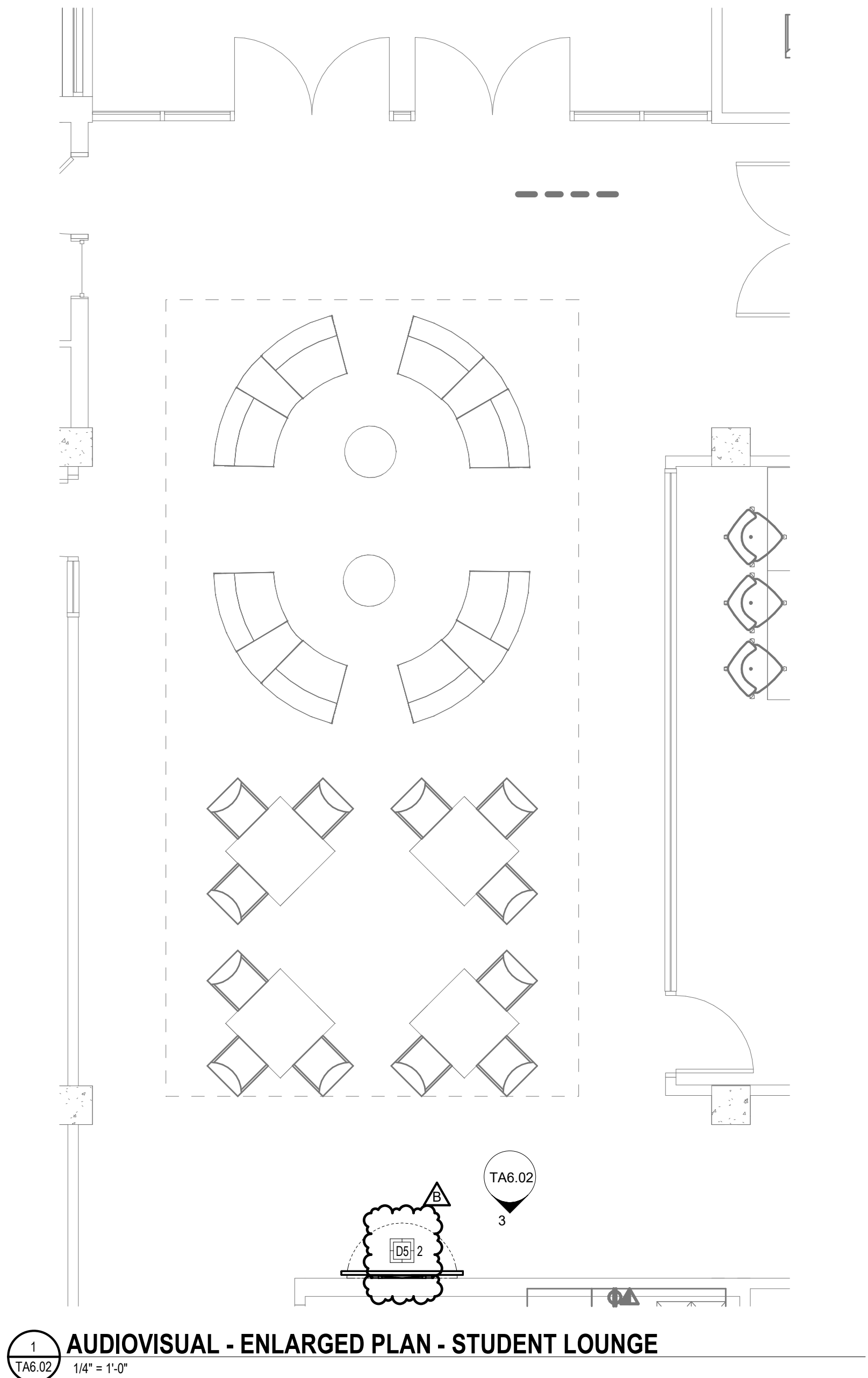
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NJDCA REF NUMBER:  
PROJECT NUMBER: **22031600**  
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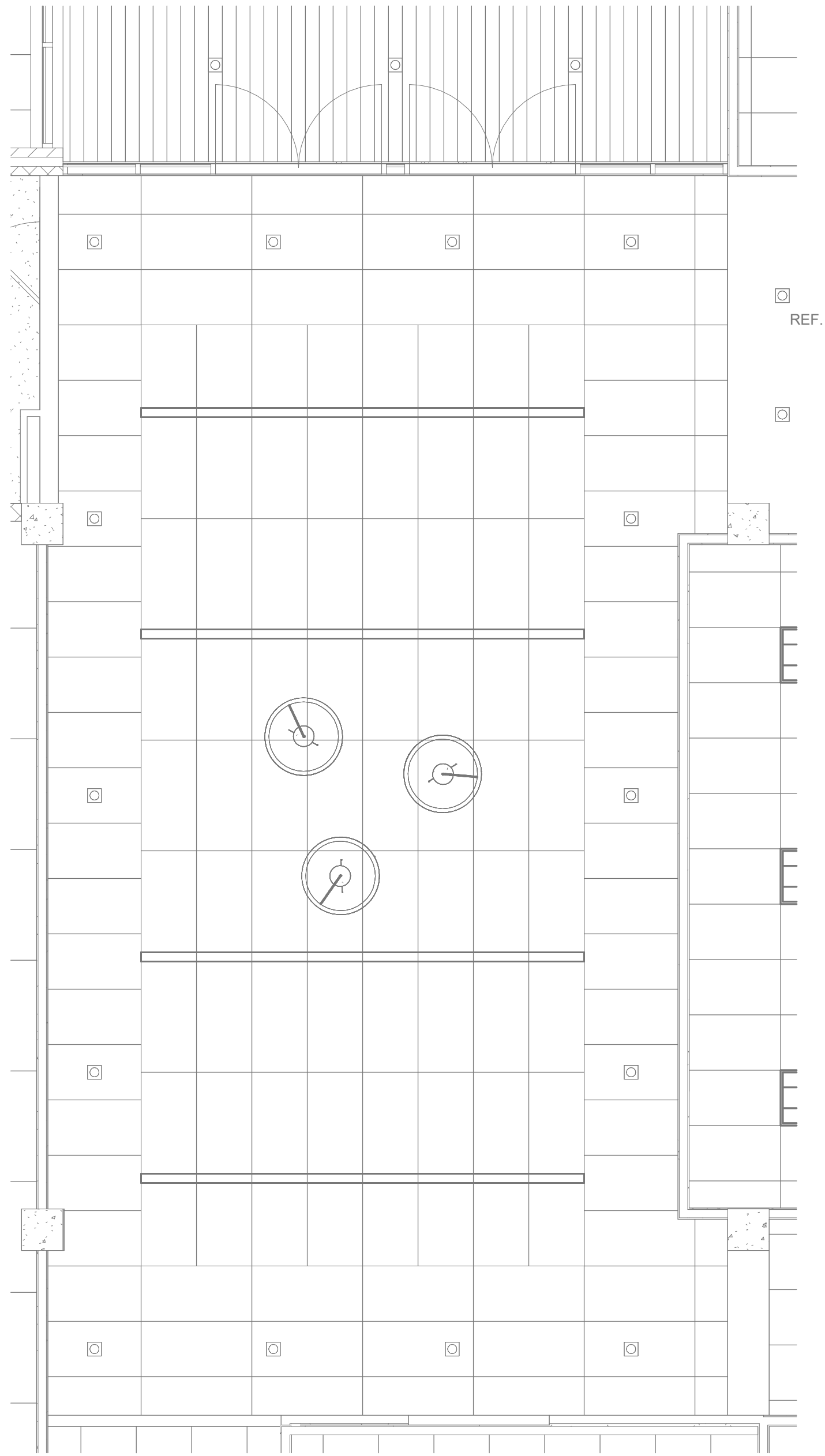
SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS - FIRST  
FLOOR LOBBY**

SHEET NUMBER:  
**TA6.01**

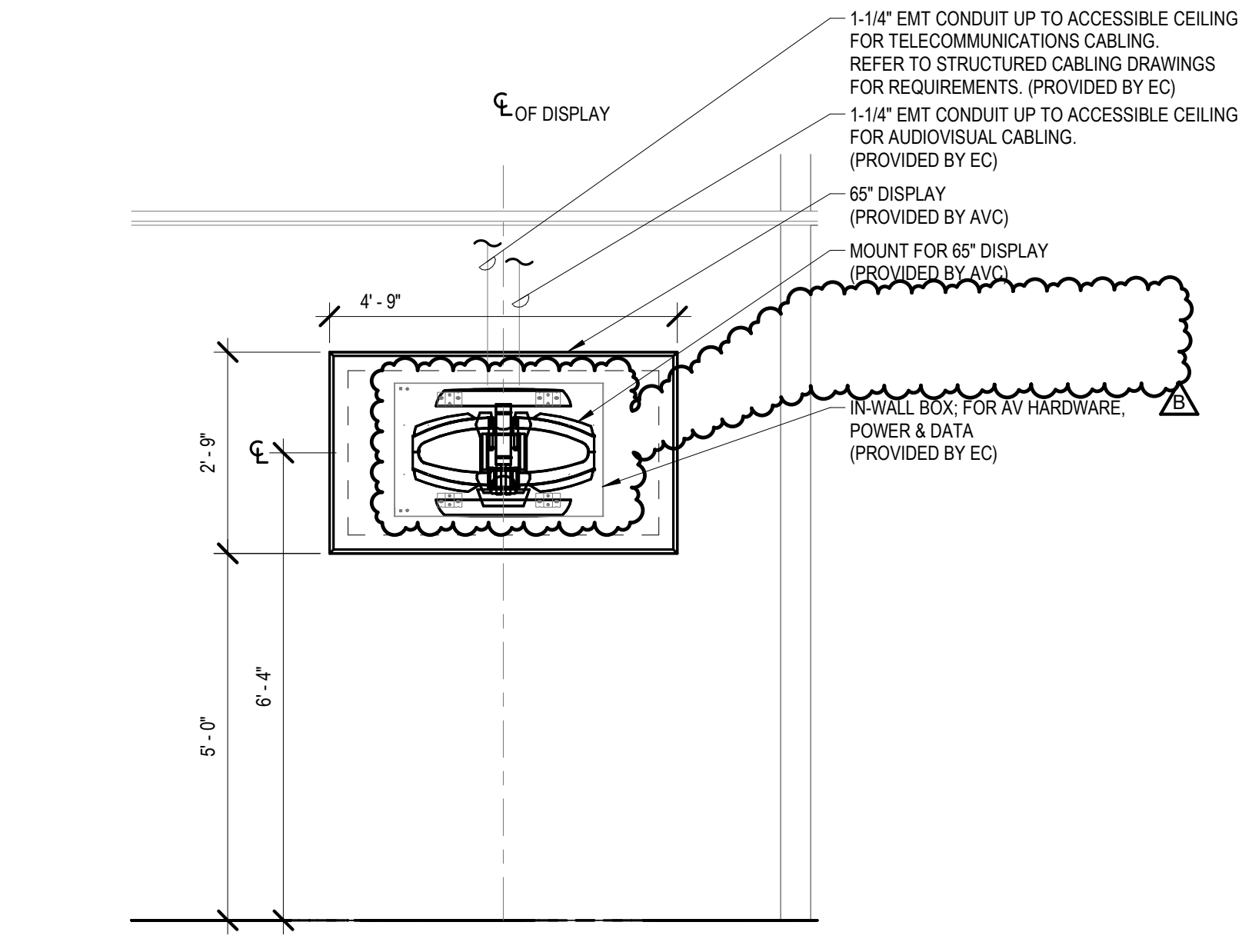




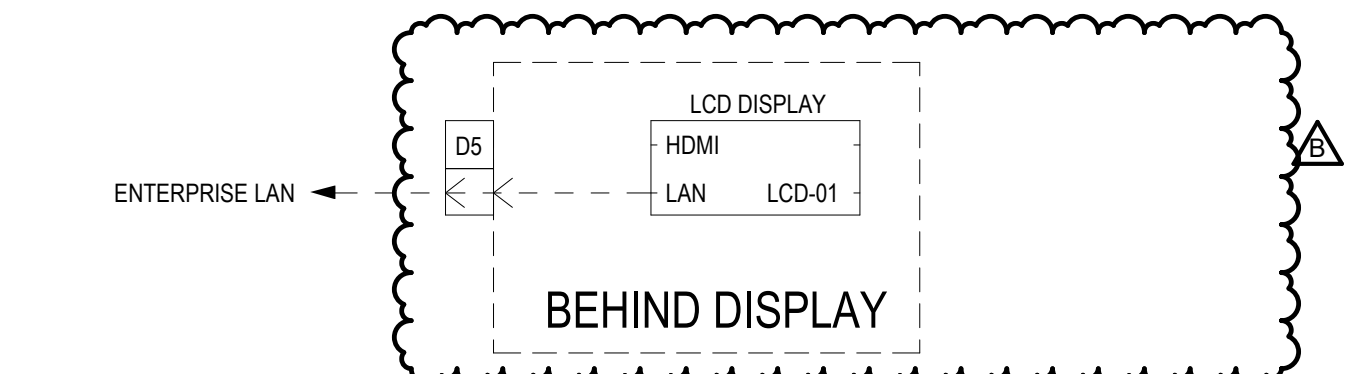
1 AUDIOVISUAL - ENLARGED PLAN - STUDENT LOUNGE  
1/4" = 1'-0"



2 AUDIOVISUAL - ENLARGED RCP - STUDENT LOUNGE  
1/4" = 1'-0" NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



3 AUDIOVISUAL - ELEVATION - STUDENT LOUNGE  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL SYSTEM DIAGRAM - STUDENT LOUNGE  
NONE

LEAVE OPEN FOR  
NJ DCA STAMP  
OF APPROVAL  
THIS SPACE IS RESERVED FOR  
NJDCA'S ELECTRONIC  
RELEASE STAMPS. THIS IS TO  
REMAIN COMPLETELY BLANK.  
BOX DIMENSIONS IS 3" WIDTH  
BY 3" HEIGHT.

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2000 PENNINGTON ROAD  
EWING, NJ

PROJECT TEAM  
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ENGINEERS  
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300 N ZEEB RD  
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**ROScoe HALL LOWER LEVEL  
INTERIOR RENOVATION**  
2000 PENNINGTON ROAD EWING, NJ  
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**PROJECT  
NORTH**

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NJDCA REF NUMBER:  
PROJECT NUMBER: 22031600  
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SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS -  
STUDENT  
LOUNGE**

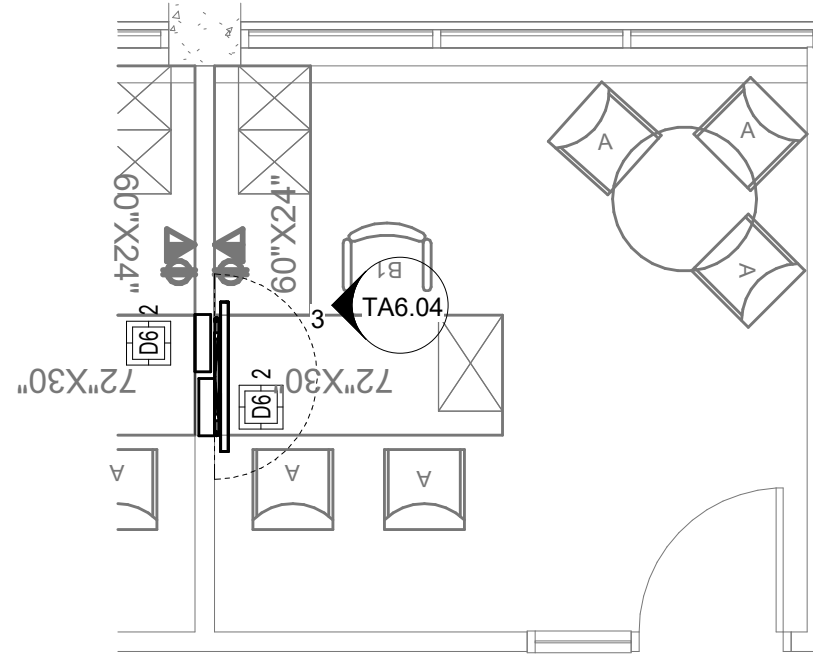
SHEET NUMBER:  
**TA6.02**



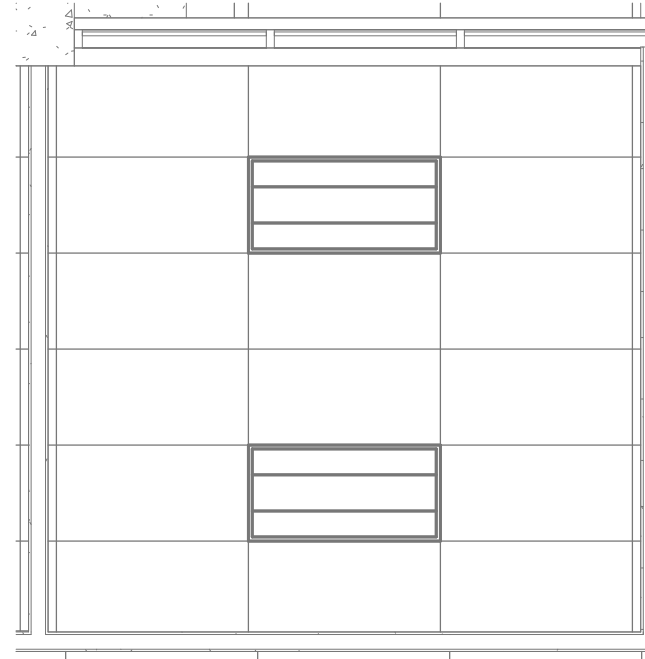


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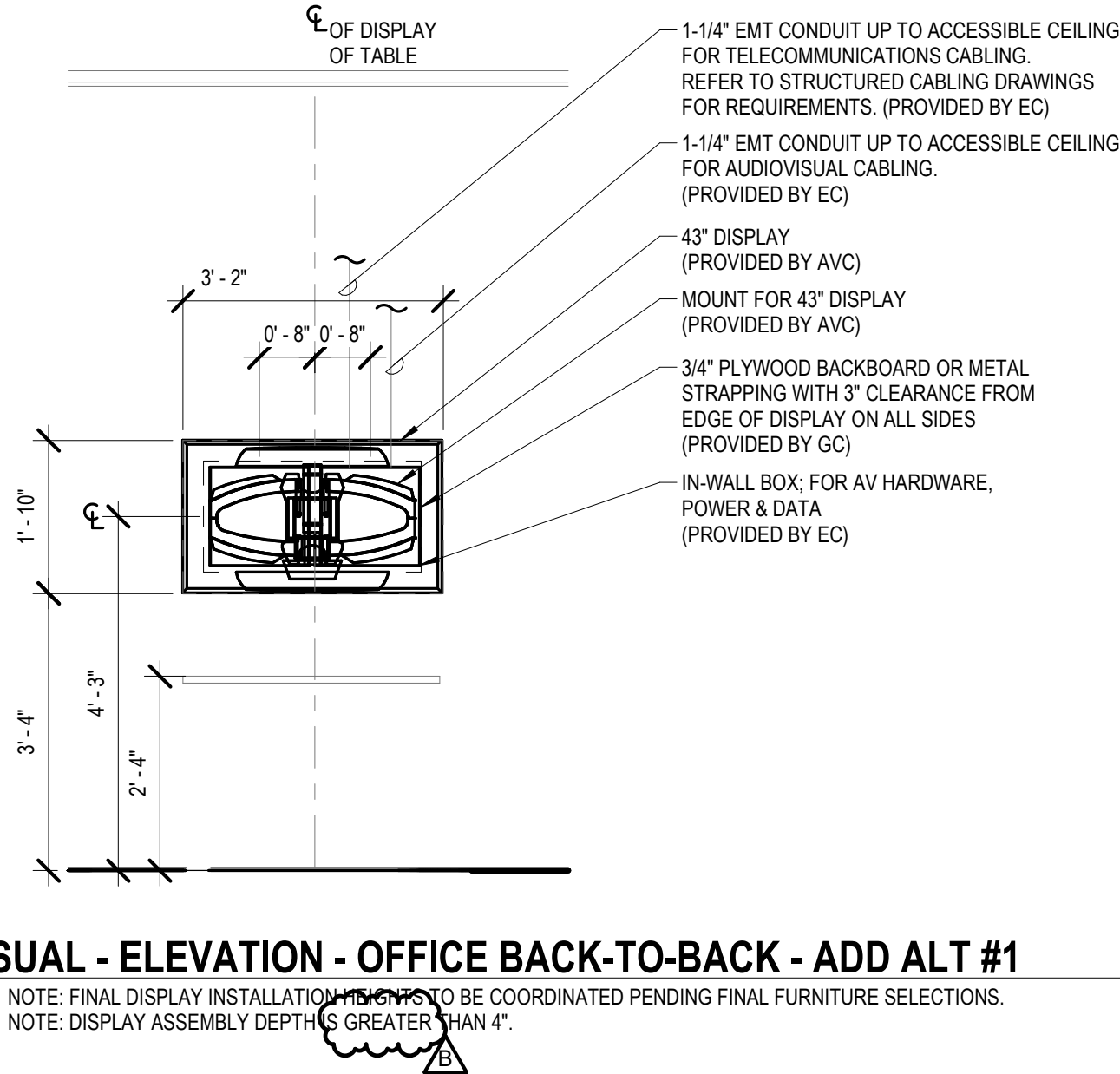




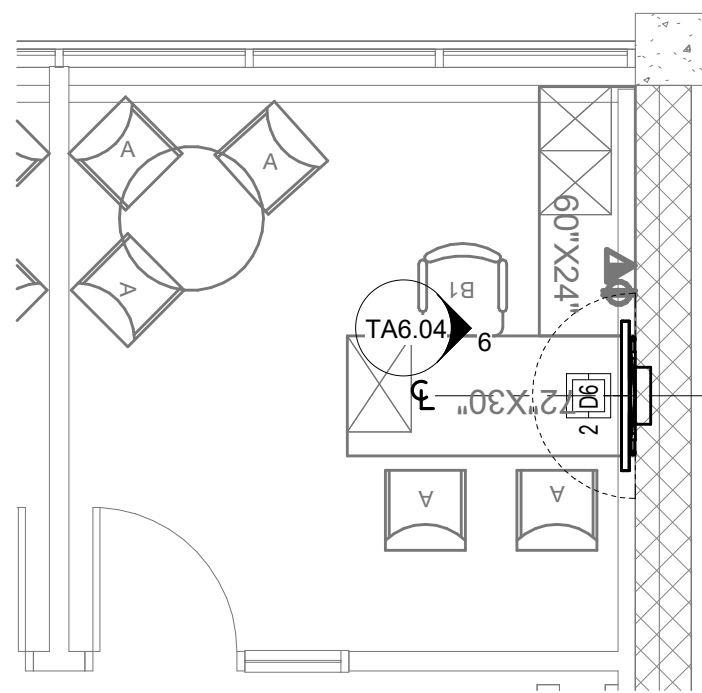
1 AUDIOVISUAL - ENLARGED PLAN - OFFICE BACK-TO-BACK - ADD ALT #1  
1/4" = 1'-0"



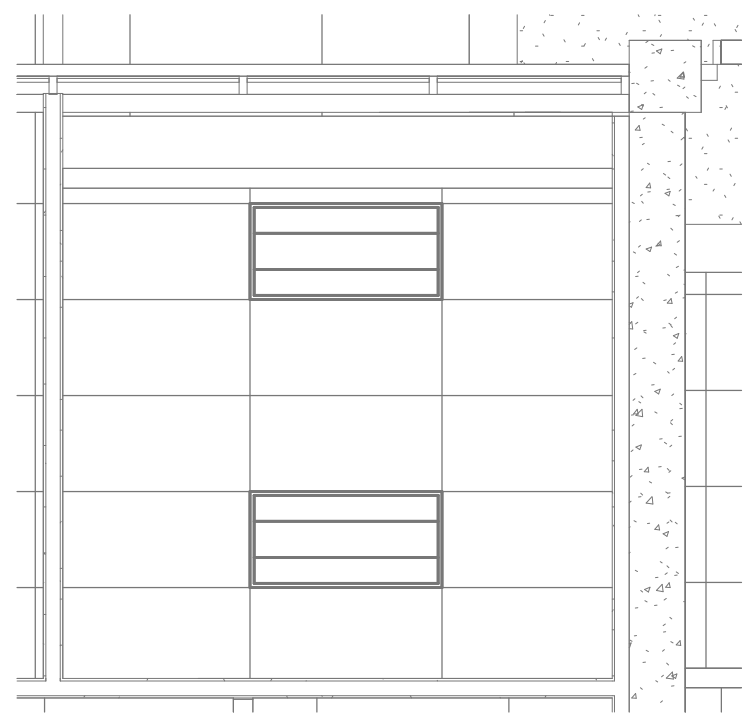
2 AUDIOVISUAL - ENLARGED RCP - OFFICE BACK-TO-BACK - ADD ALT #1  
1/4" = 1'-0"  
NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



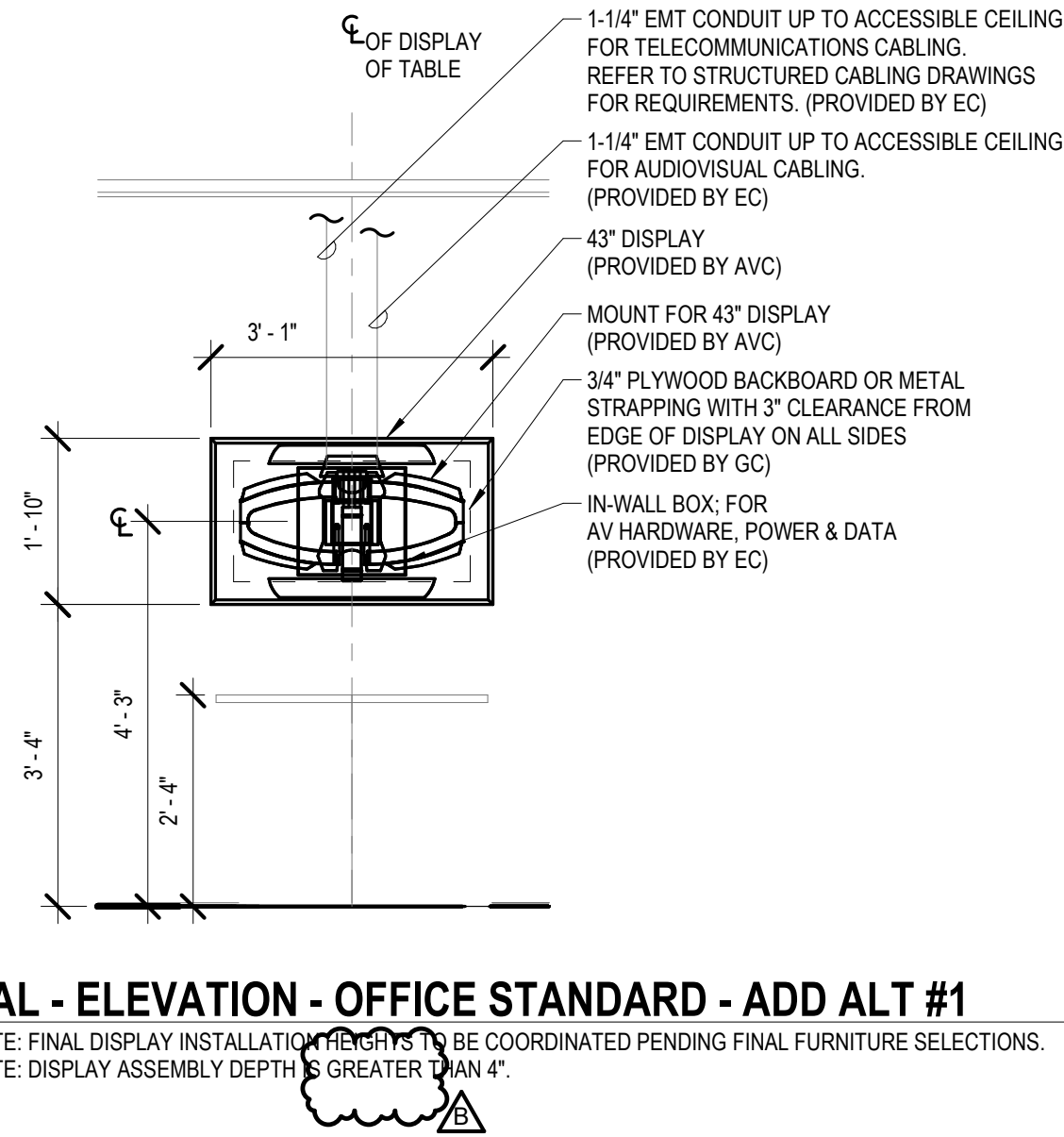
3 AUDIOVISUAL - ELEVATION - OFFICE BACK-TO-BACK - ADD ALT #1  
1/2" = 1'-0"  
NOTE: FINAL DISPLAY INSTALLATION HEIGHT TO BE COORDINATED PENDING FINAL FURNITURE SELECTIONS.  
NOTE: DISPLAY ASSEMBLY DEPTH IS GREATER THAN 4".



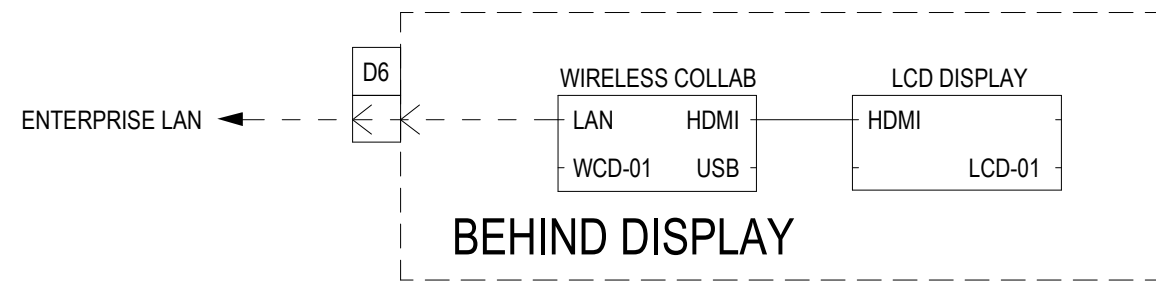
4 AUDIOVISUAL - ENLARGED PLAN - OFFICE STANDARD - ADD ALT #1  
1/4" = 1'-0"



5 AUDIOVISUAL - ENLARGED RCP - OFFICE STANDARD - ADD ALT #1  
1/4" = 1'-0"  
NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



6 AUDIOVISUAL - ELEVATION - OFFICE STANDARD - ADD ALT #1  
1/2" = 1'-0"  
NOTE: FINAL DISPLAY INSTALLATION HEIGHT TO BE COORDINATED PENDING FINAL FURNITURE SELECTIONS.  
NOTE: DISPLAY ASSEMBLY DEPTH IS GREATER THAN 4".



7 AUDIOVISUAL SYSTEM DIAGRAM - OFFICE - TYPICAL - ADD ALT #1  
NONE

LEAVE OPEN FOR  
NJ DCA STAMP  
OF APPROVAL  
THIS SPACE IS RESERVED FOR  
NJDCAS ELECTRONIC  
RELEASE STAMPS. THIS IS TO  
REMAIN COMPLETELY BLANK.  
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BY 3" HEIGHT.

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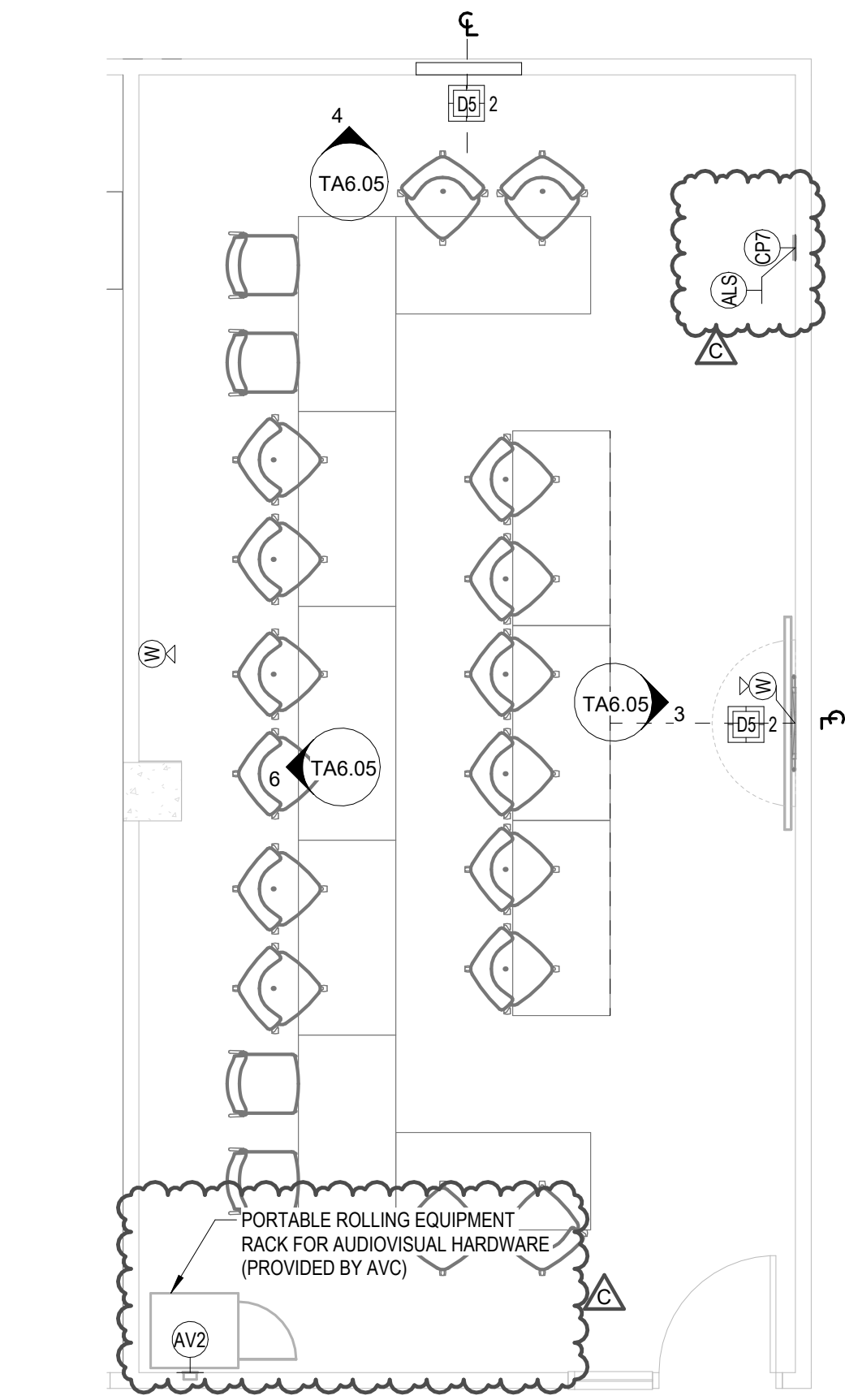
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PROJECT NUMBER: 22031600  
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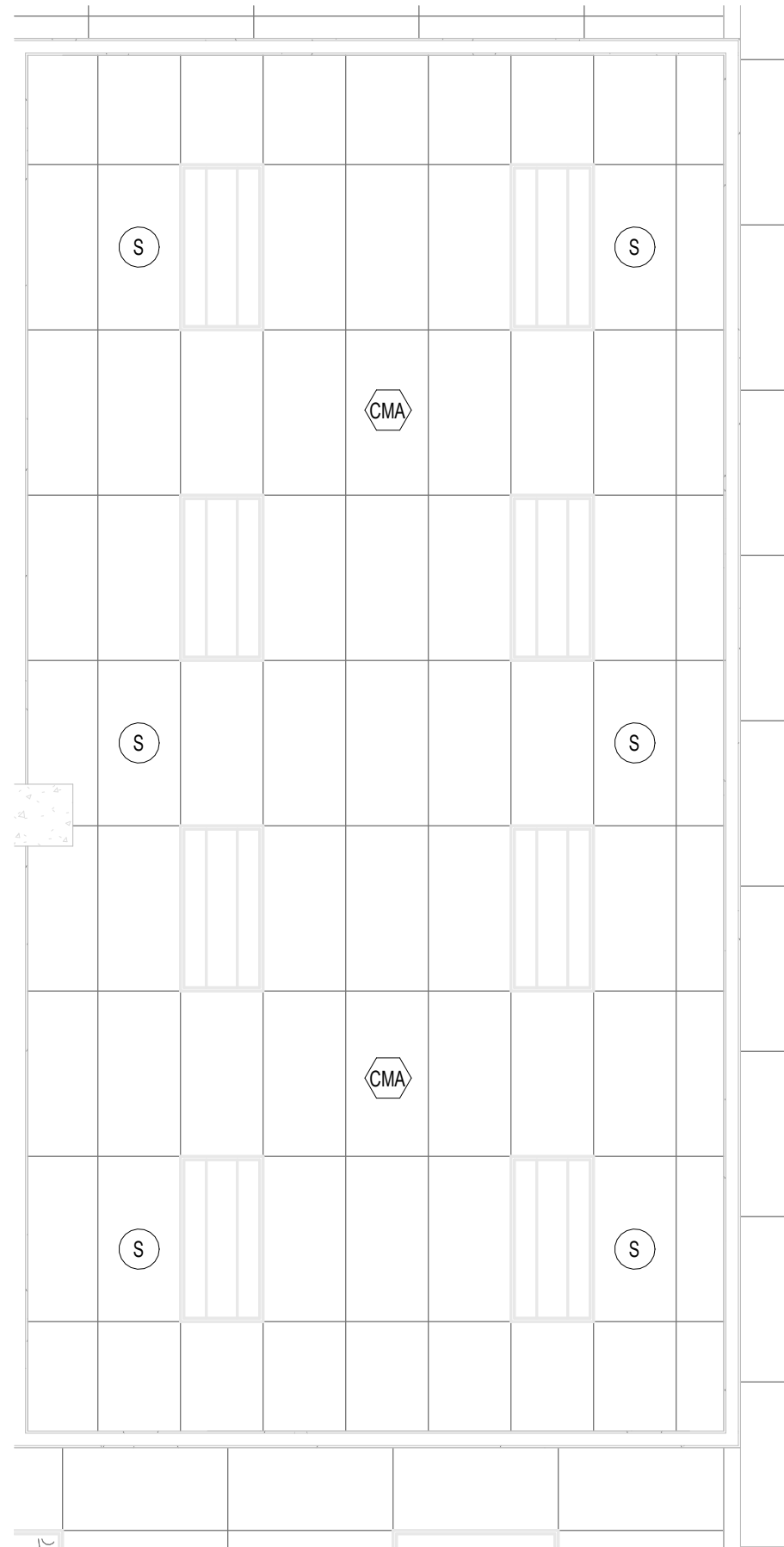
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ENLARGED  
PLANS - OFFICE  
- ADD ALT #1**

SHEET NUMBER:  
**TA6.04**

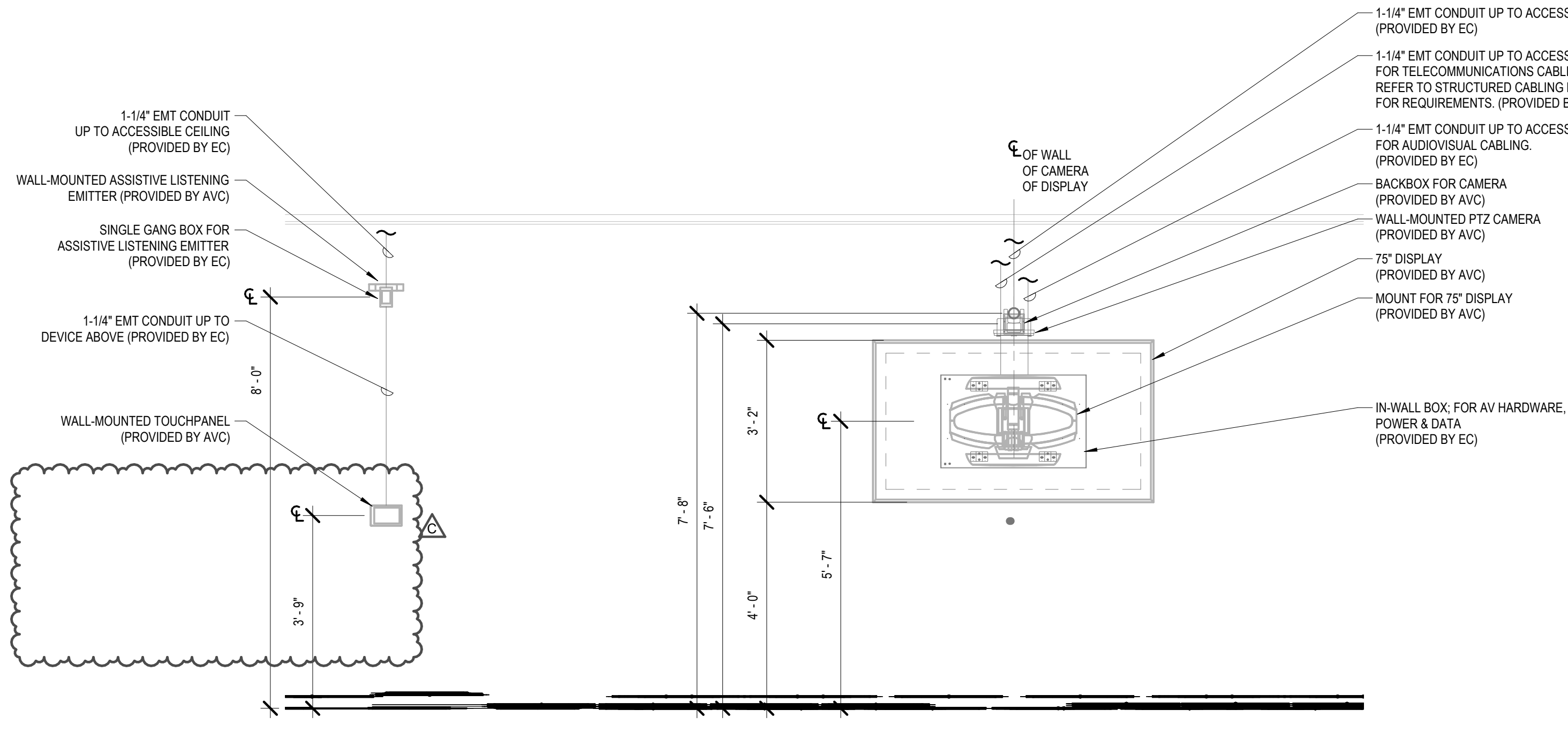




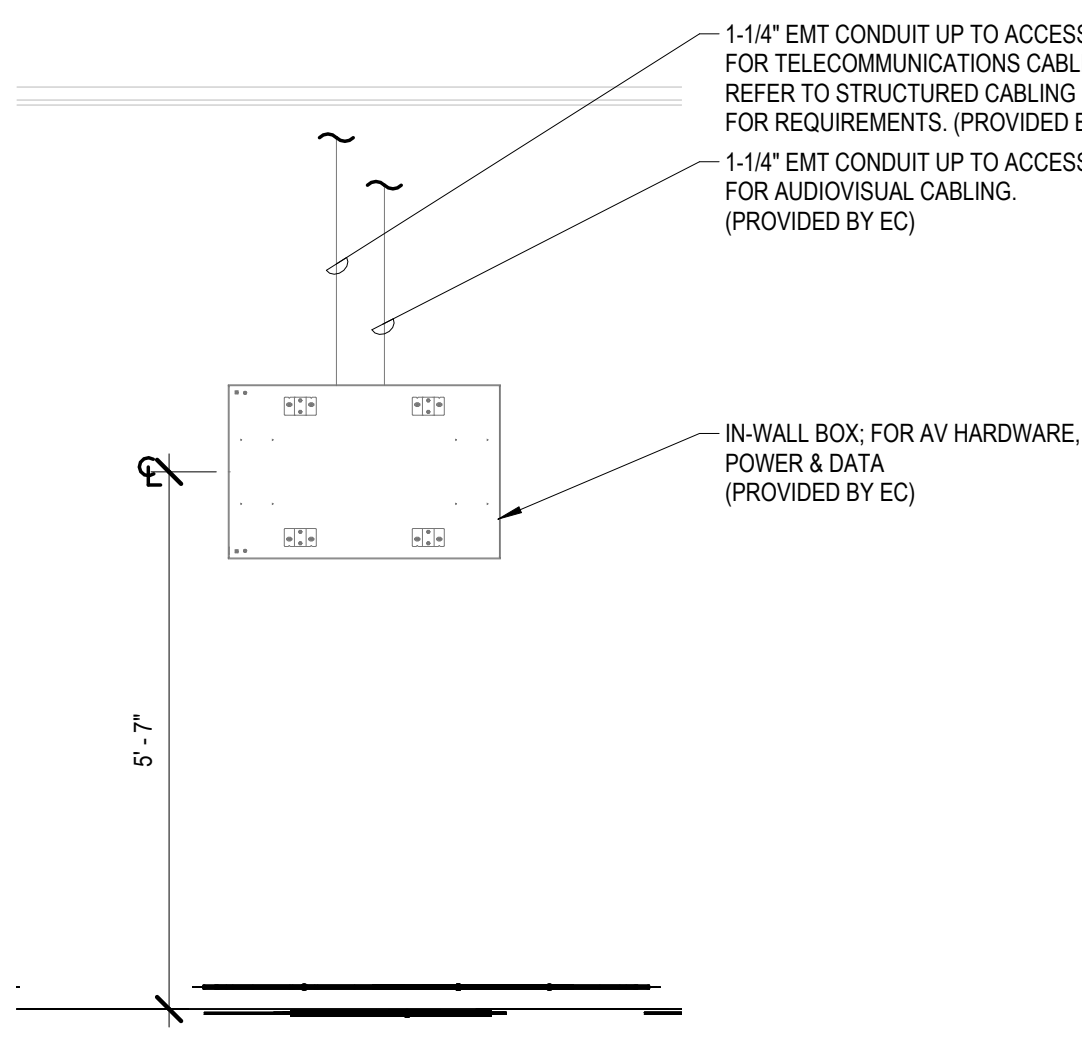
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1/4" = 1'-0"



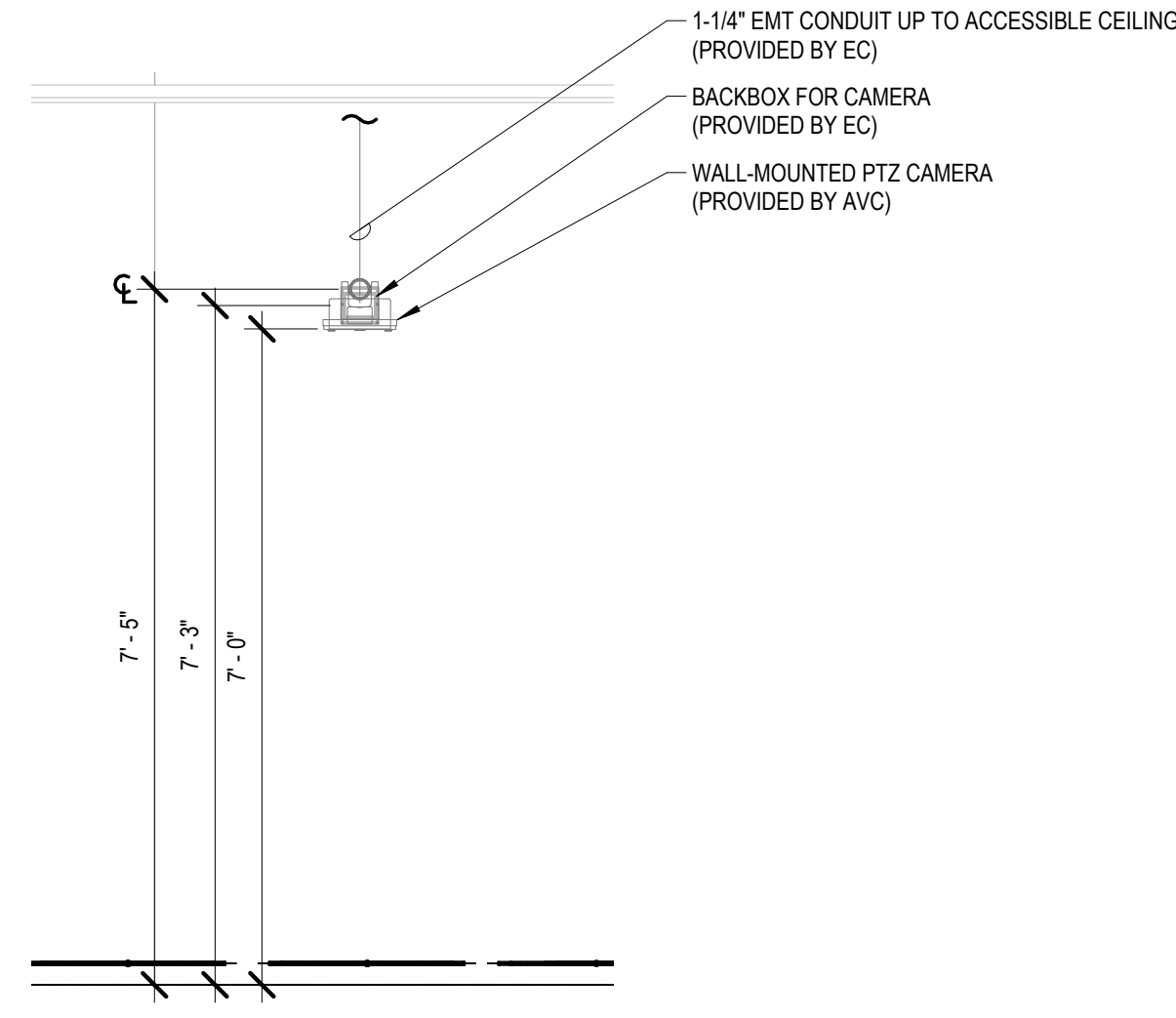
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1/4" = 1'-0"



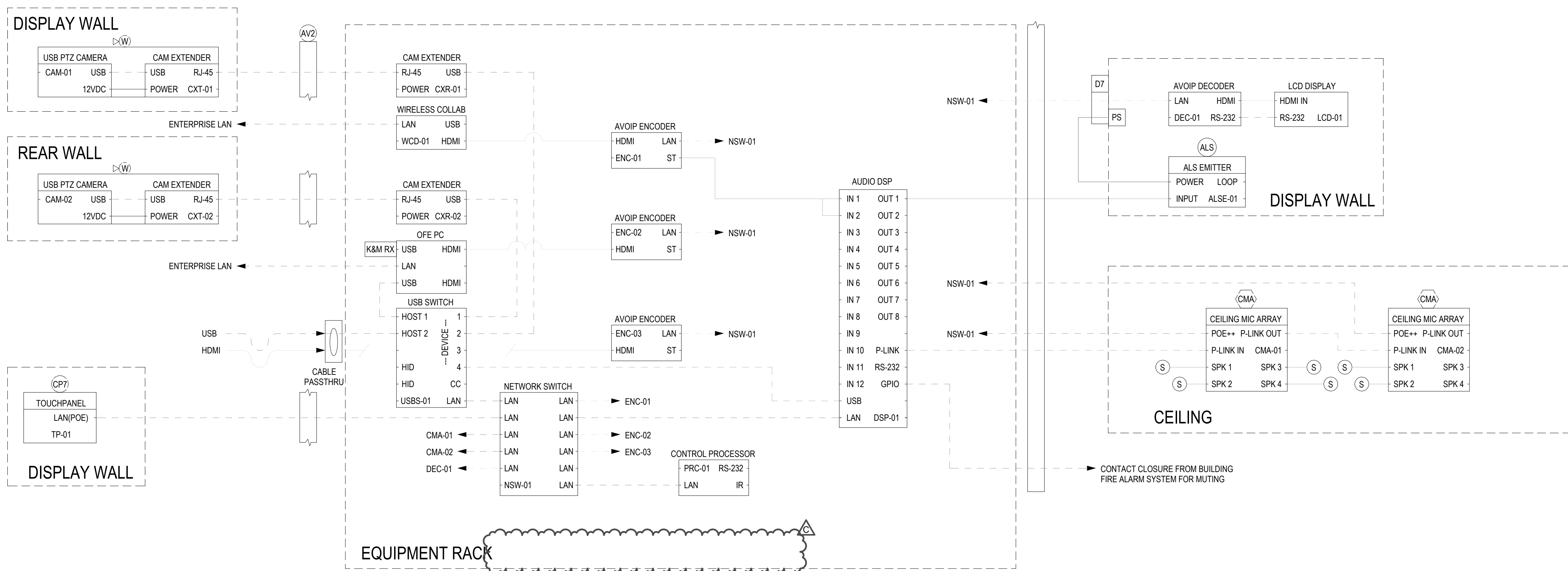
3 AUDIOVISUAL - ELEVATION - SEMINAR MAIN DISPLAY  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL - ELEVATION - SEMINAR SECONDARY DISPLAY - ALTERNATE  
1/2" = 1'-0"



5 AUDIOVISUAL - ELEVATION - SEMINAR CAMERA  
1/2" = 1'-0"



5 AUDIOVISUAL SYSTEM DIAGRAM - SEMINAR  
NONE

LEAVE OPEN FOR  
NJ DCA STAMP  
OF APPROVAL  
THIS SPACE IS RESERVED FOR  
NJ DCA'S ELECTRONIC  
RELEASE STAMPS. THIS IS TO  
REMAIN COMPLETELY BLANK.  
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BY 3" HEIGHT.

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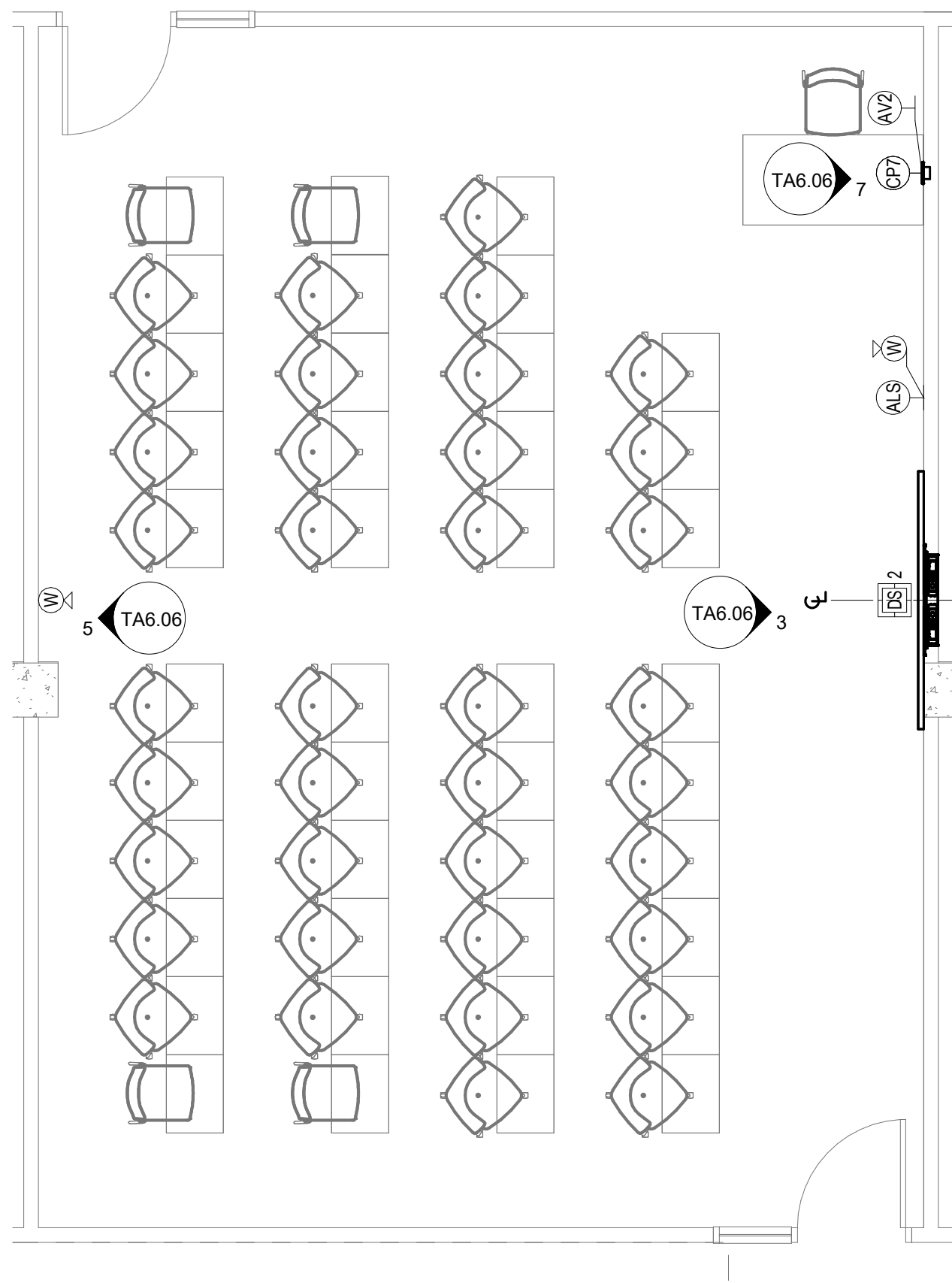
**PROJECT  
NORTH**

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4	2024.07.26	ADENDUM 1 - ISSUE FOR BID		
5	2024.08.26	ADENDUM 1 - ISSUE FOR CONSTRUCTION		
6	2024.12.10	AV IT S ADDENDUM 1		
7	2024.12.16	BULLETIN 1		

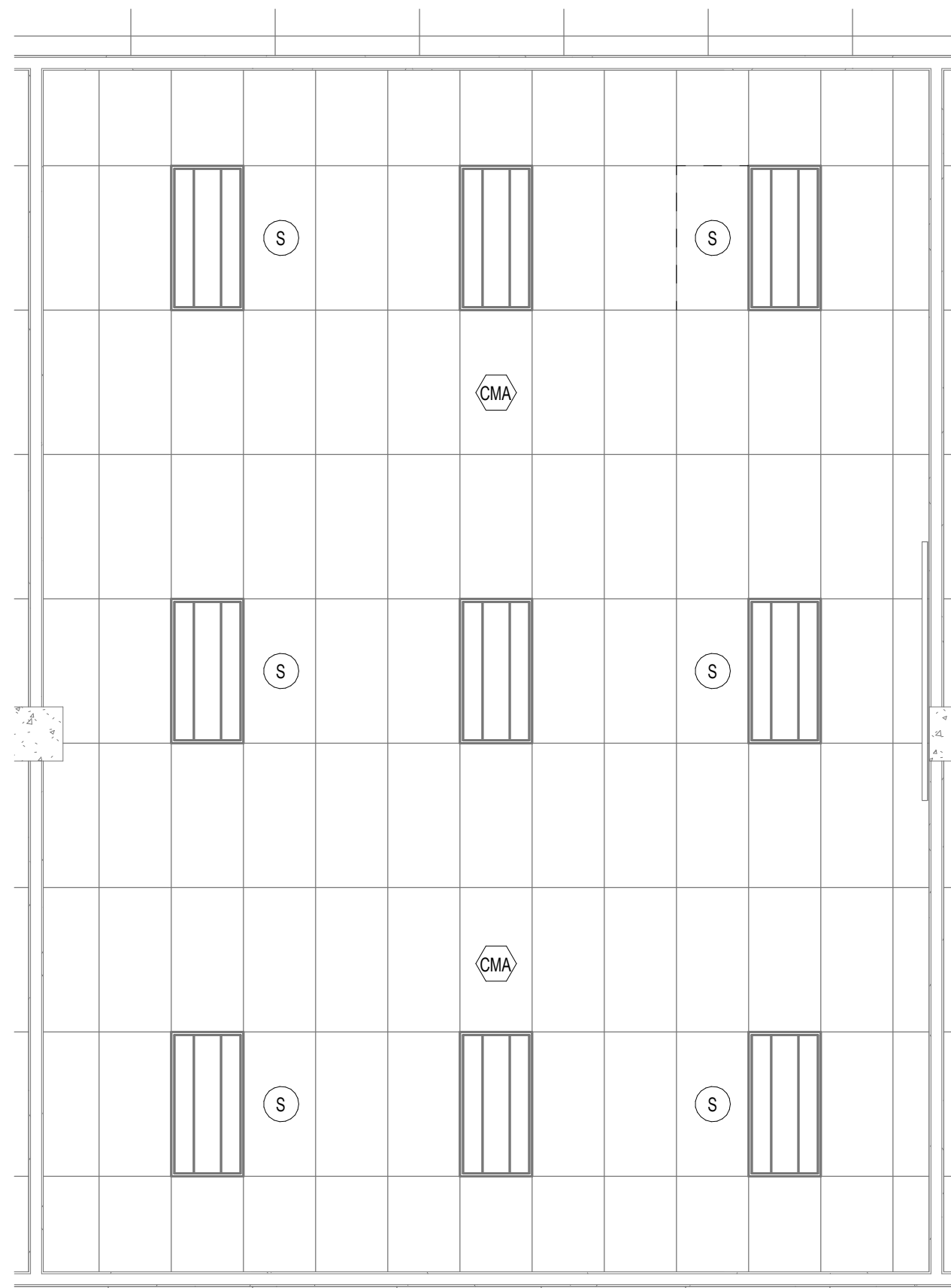
NJ DCA REF NUMBER:  
PROJECT NUMBER: **22031600**  
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SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS -  
SEMINAR**

SHEET NUMBER:  
**TA6.05**

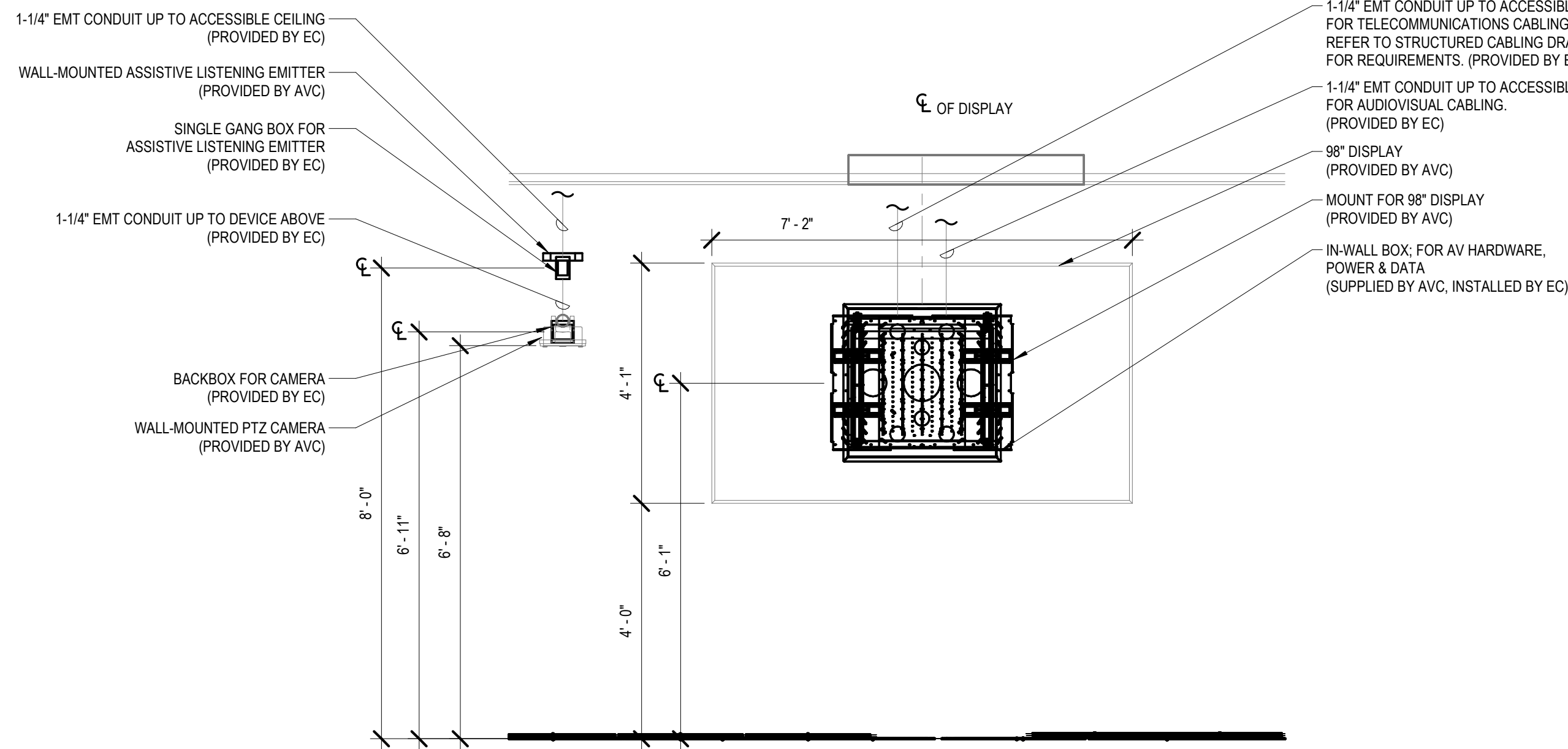




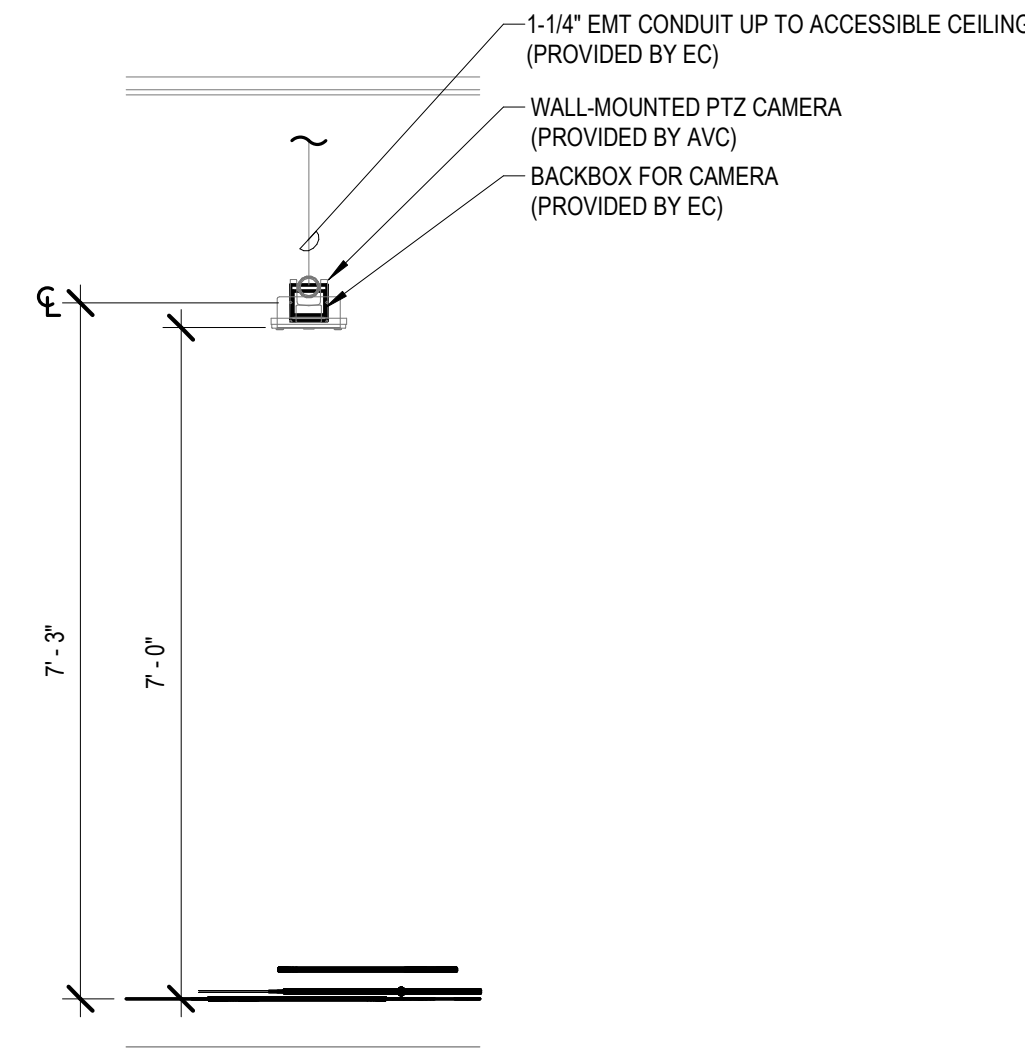
1 AUDIOVISUAL - ENLARGED PLAN - CLASSROOM G18/G19  
1/4" = 1'-0"



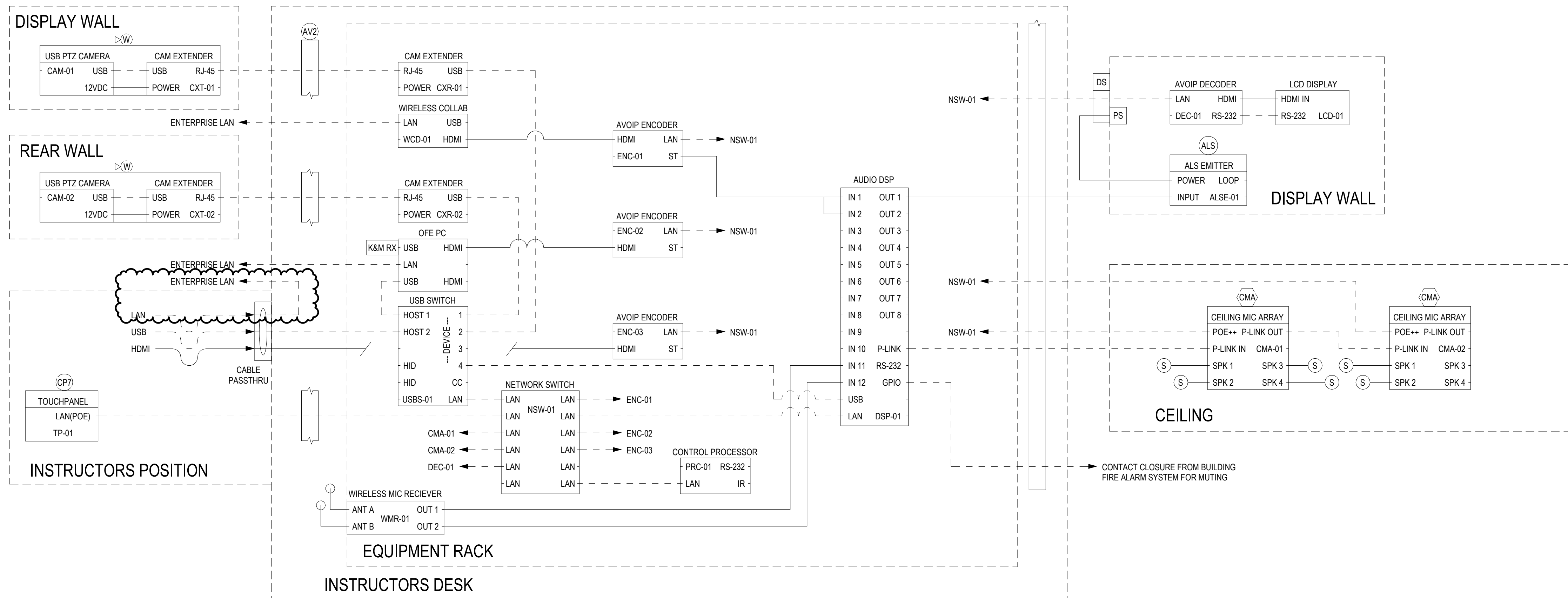
2 AUDIOVISUAL - ENLARGED RCP - CLASSROOM G18/G19  
1/4" = 1'-0"



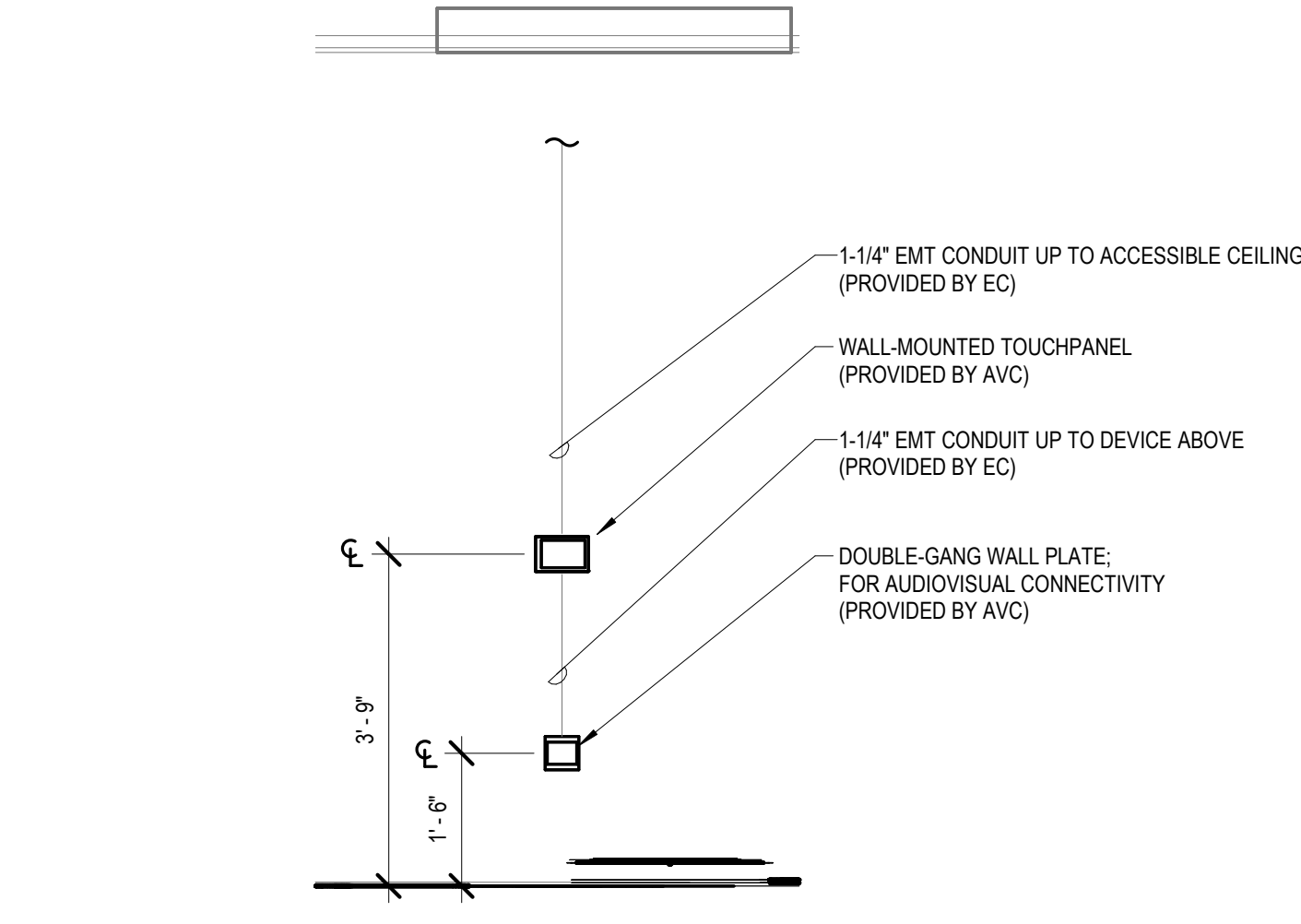
3 AUDIOVISUAL - ELEVATION - CLASSROOM G18/G19  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



5 AUDIOVISUAL - ELEVATION - CLASSROOM G18/G19 REAR CAM  
1/2" = 1'-0"



6 AUDIOVISUAL SYSTEM DIAGRAM - CLASSROOM G18/G19 - TYPICAL  
NONE



7 AUDIOVISUAL - ELEVATION - CLASSROOM G18/G19 TEACHERS DESK  
1/2" = 1'-0"

LEAVE OPEN FOR  
NJ DCA STAMP  
OF APPROVAL  
THIS SPACE IS RESERVED FOR  
NJDCAS ELECTRONIC  
RELEASE STAMPS. THIS IS TO  
REMAIN COMPLETELY BLANK.  
BOX DIMENSIONS IS 3" WIDTH  
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PROJECT TEAM

**BALA**  
ENGINEERS

REGISTERED ARCHITECTS: NEW YORK, BROOKLYN, CALIFORNIA, WASHINGTON, DC  
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REV	DATE	DESCRIPTION	DRW	CHK
1	2024.05.08	DESIGN DOCUMENT REVIEW		
2	2024.05.08	DESIGN DOCUMENT REVIEW		
3	2024.05.08	DESIGN DOCUMENT REVIEW		
4	2024.05.08	DESIGN DOCUMENT REVIEW		
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19	2024.05.08	DESIGN DOCUMENT REVIEW		
20	2024.05.08	DESIGN DOCUMENT REVIEW		

NJDCA REF NUMBER: 22031600  
PROJECT NUMBER: 22031600  
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**AUDIOVISUAL -  
ENLARGED  
PLANS -  
CLASSROOM  
G18/19**

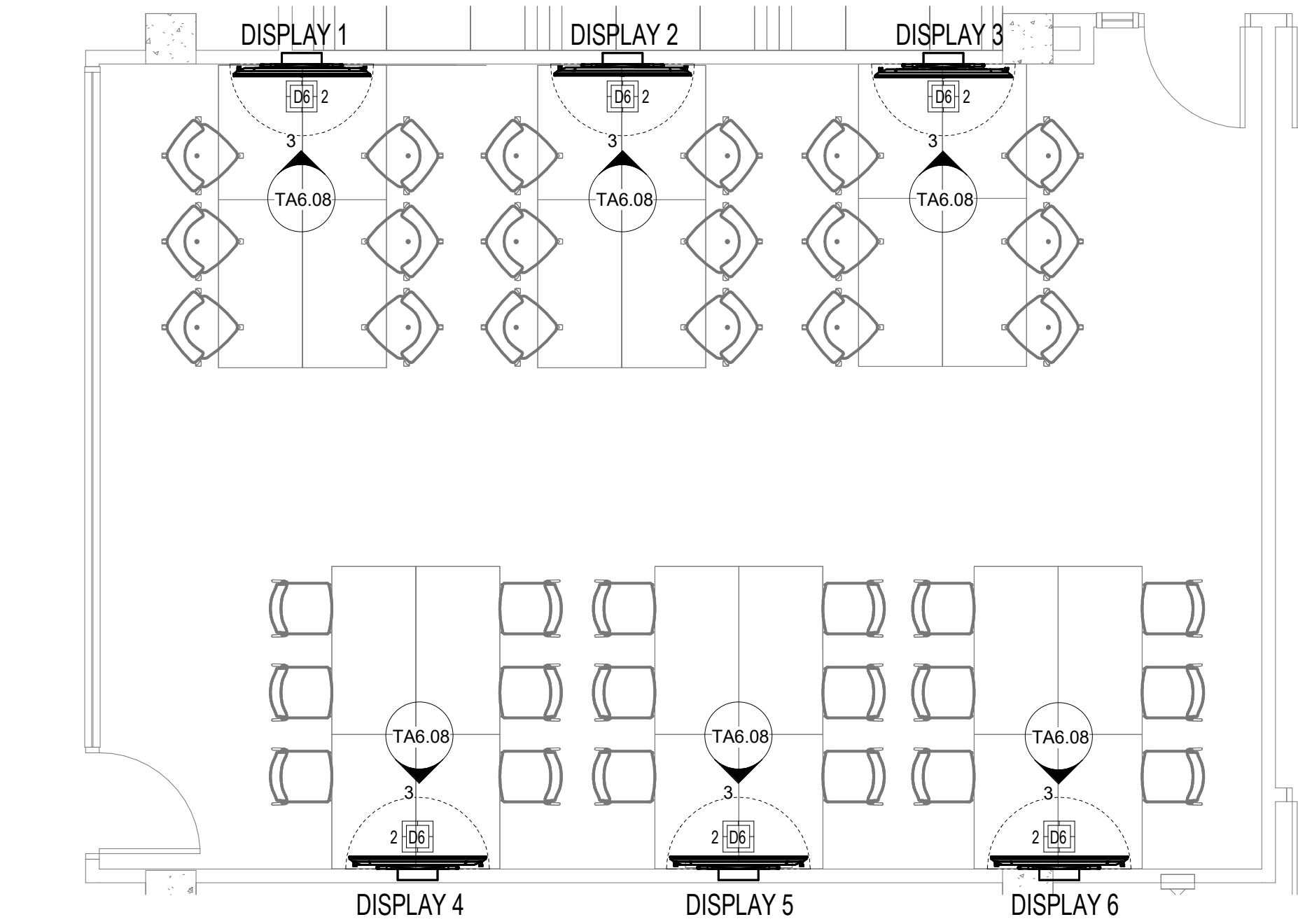
**TA6.06**



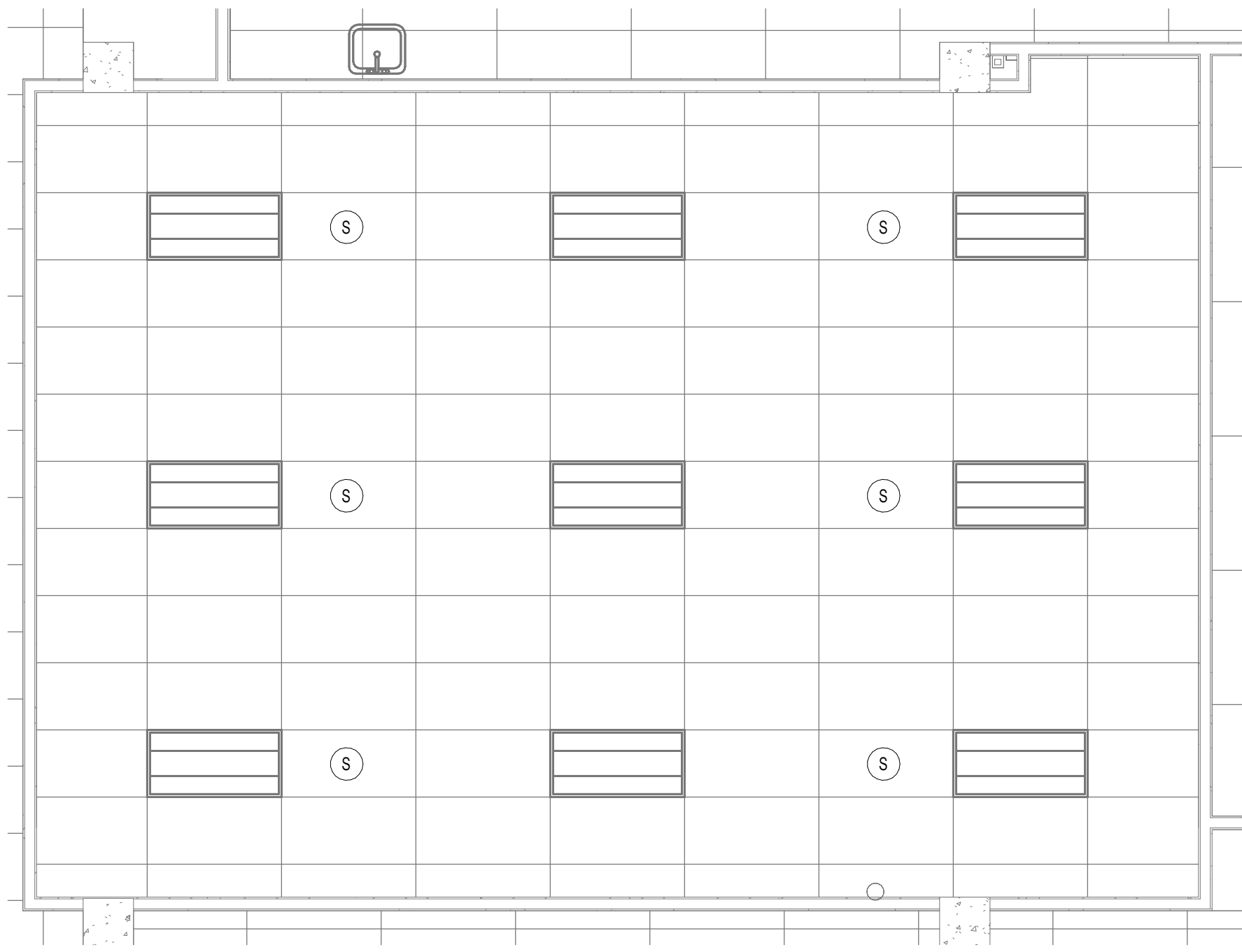


SHEET NUMBER:  
**TA6.07**

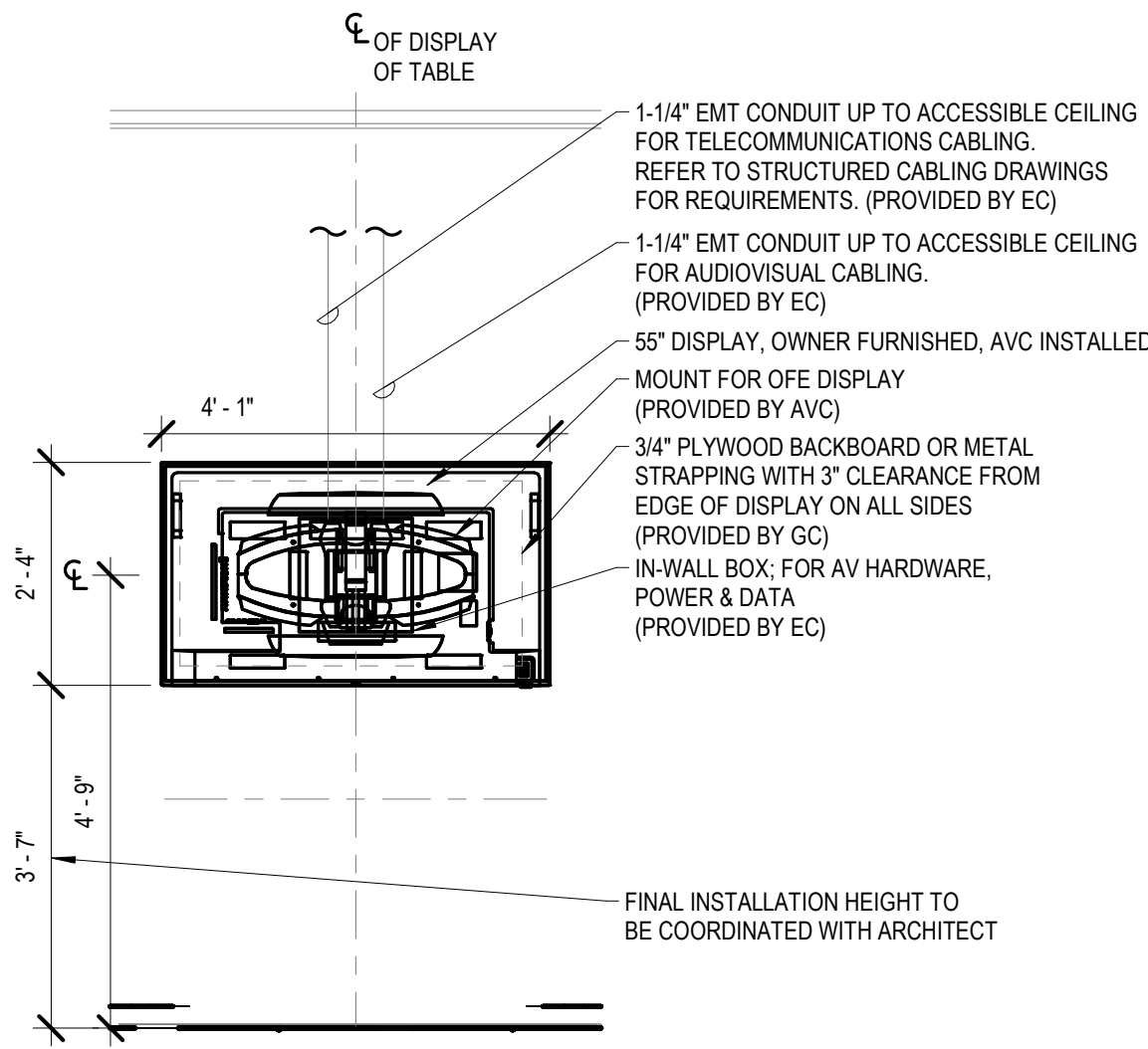




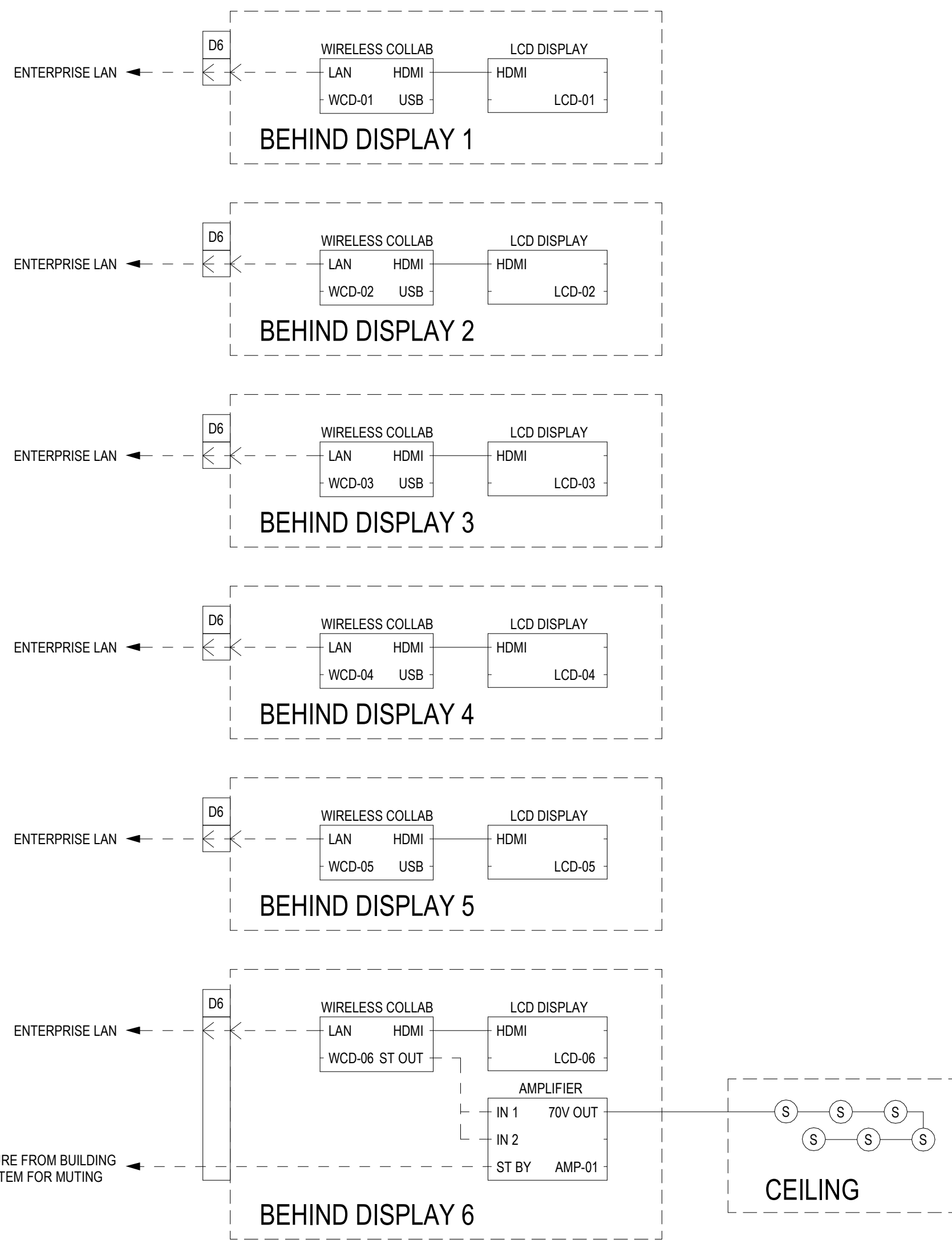
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TA6.08  
AUDIOVISUAL - ENLARGED PLAN - CETL LEARNING STUDIO  
1/4" = 1'-0"



2  
TA6.08  
AUDIOVISUAL - ENLARGED RCP - CETL LEARNING STUDIO  
1/4" = 1'-0"



3  
TA6.08  
AUDIOVISUAL - ELEVATION - CETL LEARNING STUDIO  
1/2" = 1'-0"  
NOTE: DISPLAY ASSEMBLY DEPTH IS GREATER THAN 4" BUT IS LOCATED OVER FIXED FURNITURE AND WILL NOT REQUIRE FURTHER ACCOMMODATIONS TO MEET ADA REQUIREMENTS.



4  
TA6.08  
AUDIOVISUAL SYSTEM DIAGRAM - CETL LEARNING STUDIO  
NONE

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PROJECT TEAM  
**BALA**  
ENGINEERS

UNLICENSED AREA: NEW YORK: BIDDING (SINCE 1/2020) (WASHINGTON, DC:  
MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION,  
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**PROJECT  
NORTH**

REV	DATE	DESCRIPTION	DRW	CHK
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4	2024.06.21	ISSUED FOR BID		
5	2024.07.26	ADDITIONAL ISSUE FOR CONSTRUCTION		
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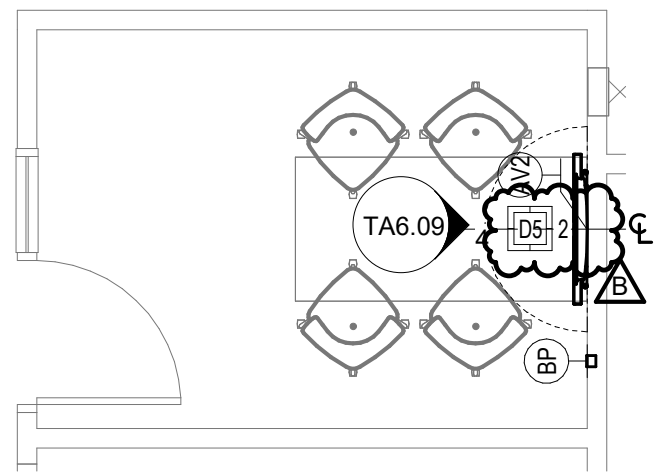
NJDCA REF NUMBER:  
PROJECT NUMBER: **22031600**  
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SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS - CETL  
LEARNING  
STUDIO**

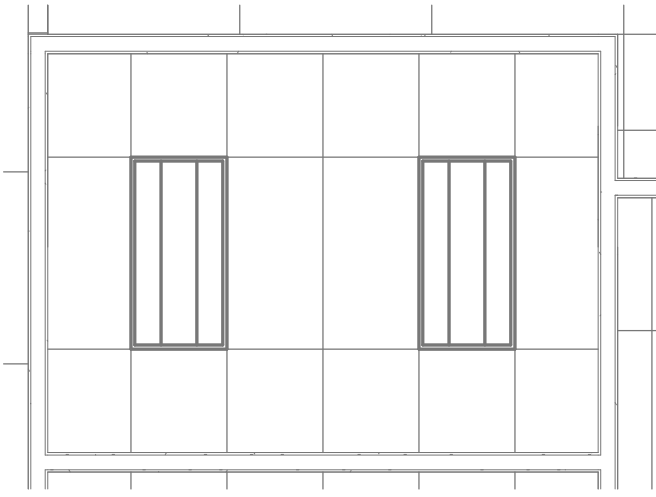
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**TA6.08**



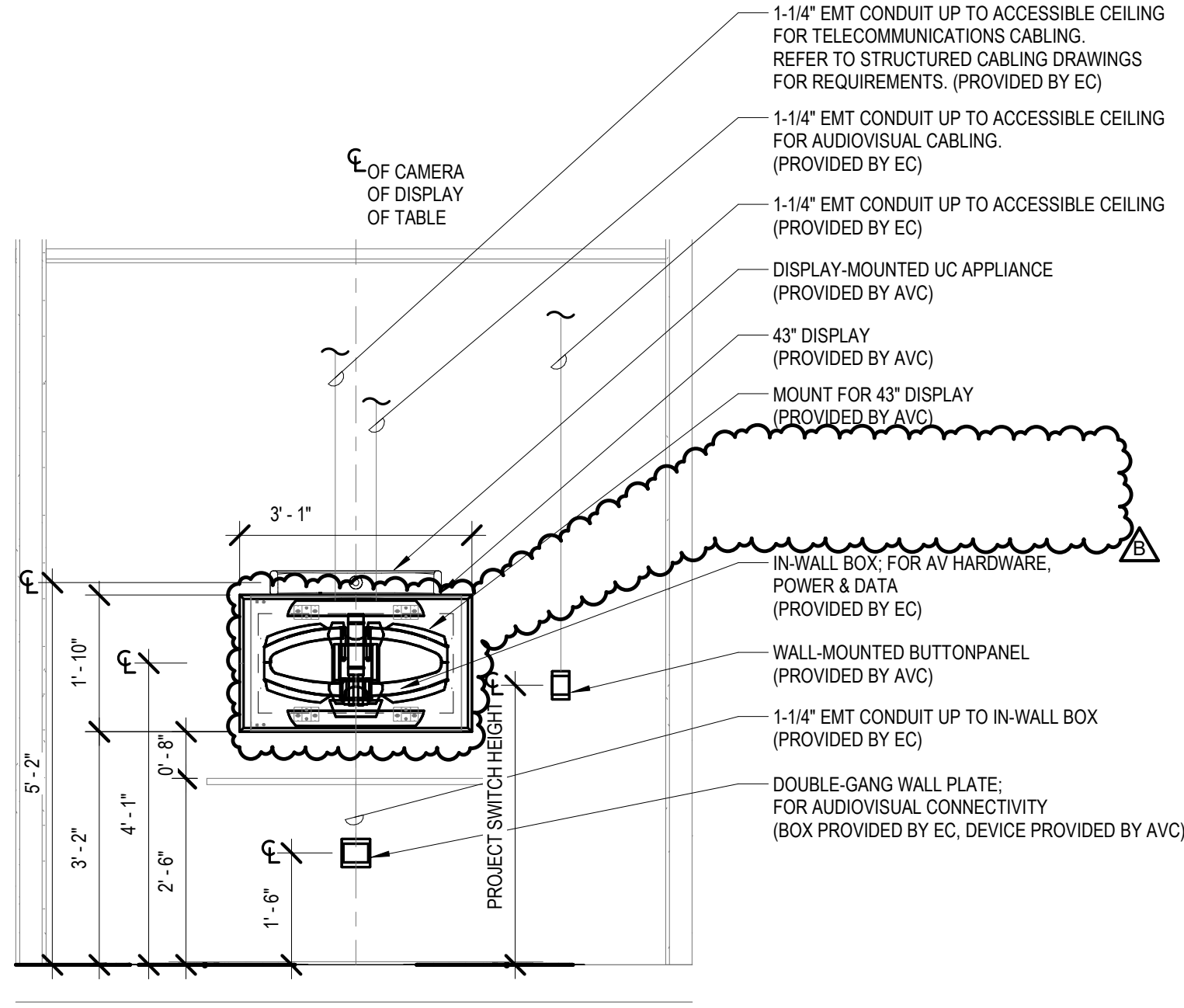
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TA6.09  
AUDIOVISUAL - ENLARGED PLAN - SMALL GROUP STUDY - ADD ALT #1  
1/4" = 1'-0"



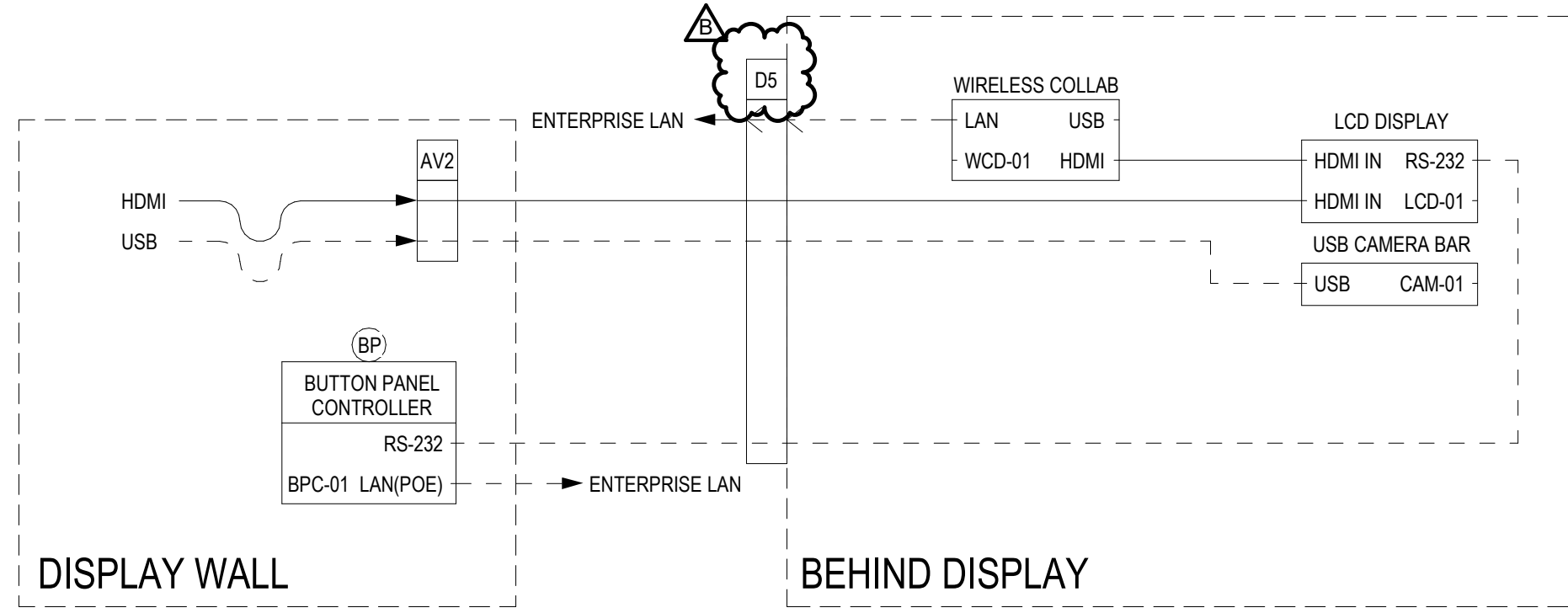
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TA6.09  
AUDIOVISUAL - ENLARGED RCP - SMALL GROUP STUDY - ADD ALT #1  
1/4" = 1'-0"  
NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



3  
TA6.09  
AUDIOVISUAL - ELEVATION - SMALL GROUP STUDY - ADD ALT #1  
1/2" = 1'-0"  
NOTE: FINAL DISPLAY INSTALLATION HEIGHTS TO BE COORDINATED PENDING FINAL FURNITURE SELECTIONS.  
NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4".



3  
TA6.09  
AUDIOVISUAL SYSTEM DIAGRAM - SMALL GROUP STUDY - ADD ALT #1  
NONE



LEAVE OPEN FOR  
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REMAIN COMPLETELY BLANK.  
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BY 3" HEIGHT.

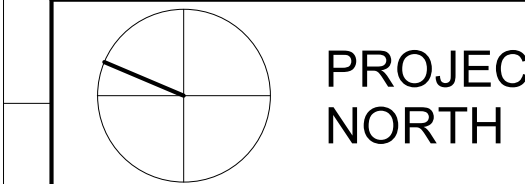
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PROJECT NUMBER: **22031600**  
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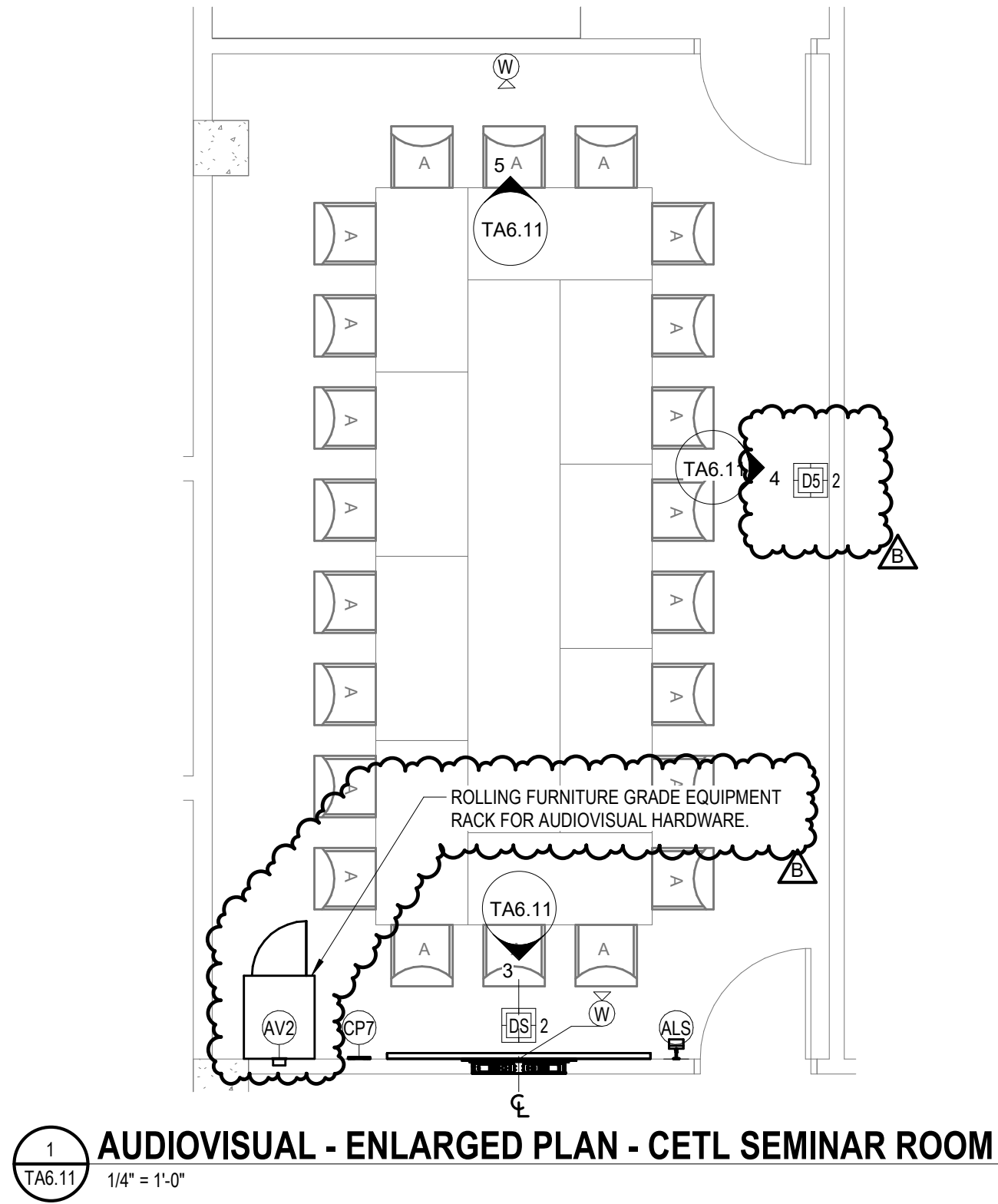
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**AUDIOVISUAL -  
ENLARGED  
PLANS - SMALL  
GROUP STUDY -  
ADD ALT #1**

SHEET NUMBER:  
**TA6.09**

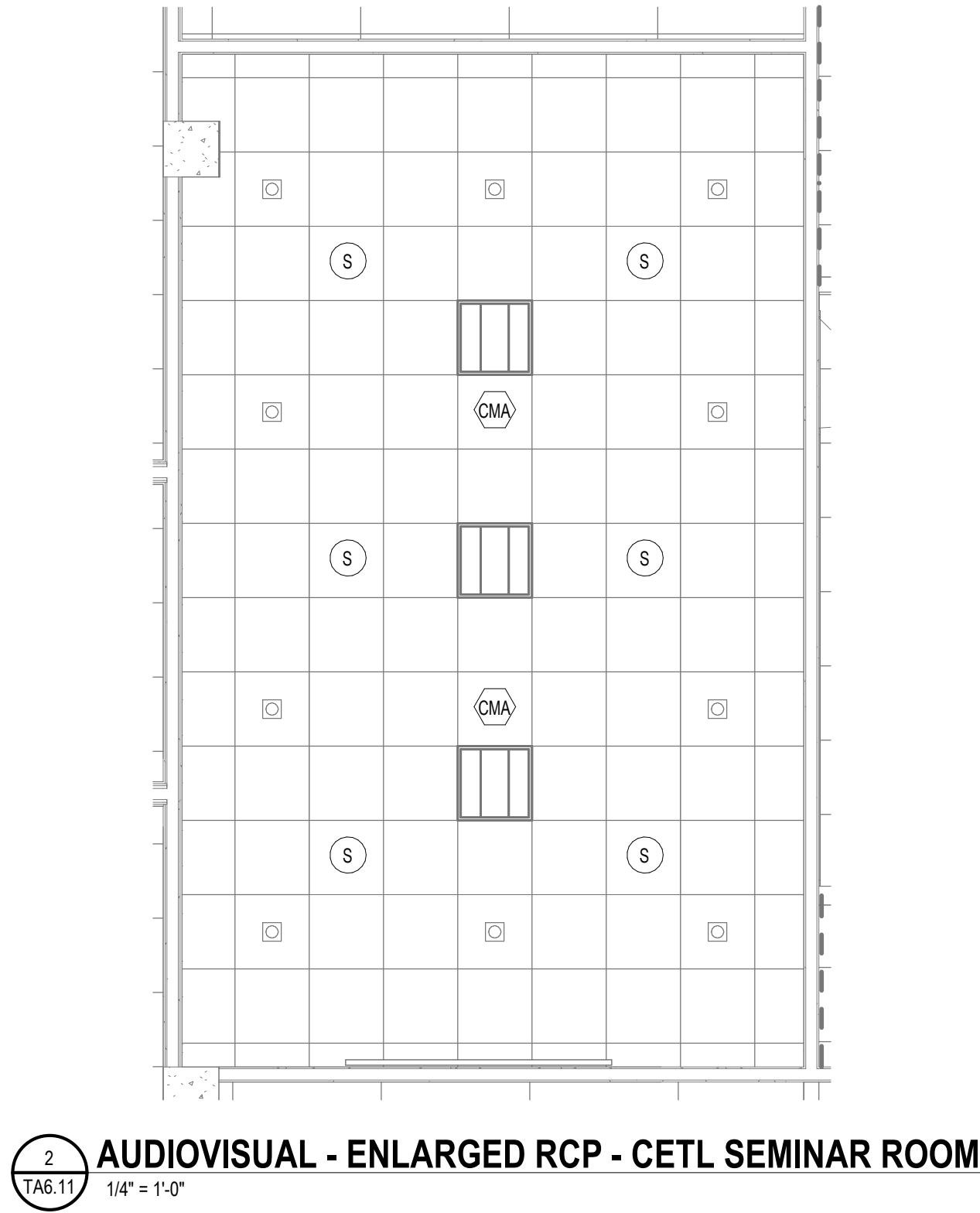




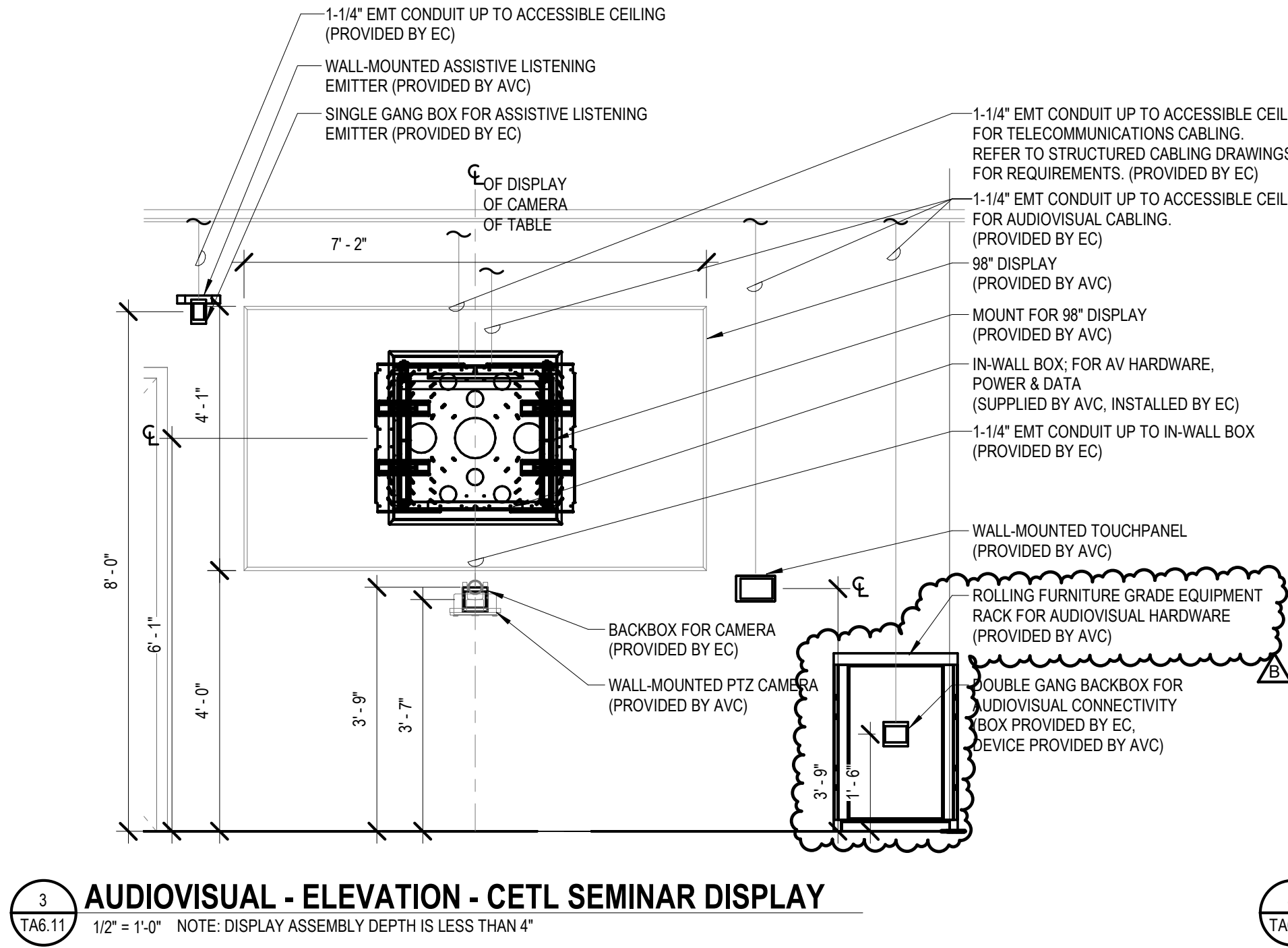




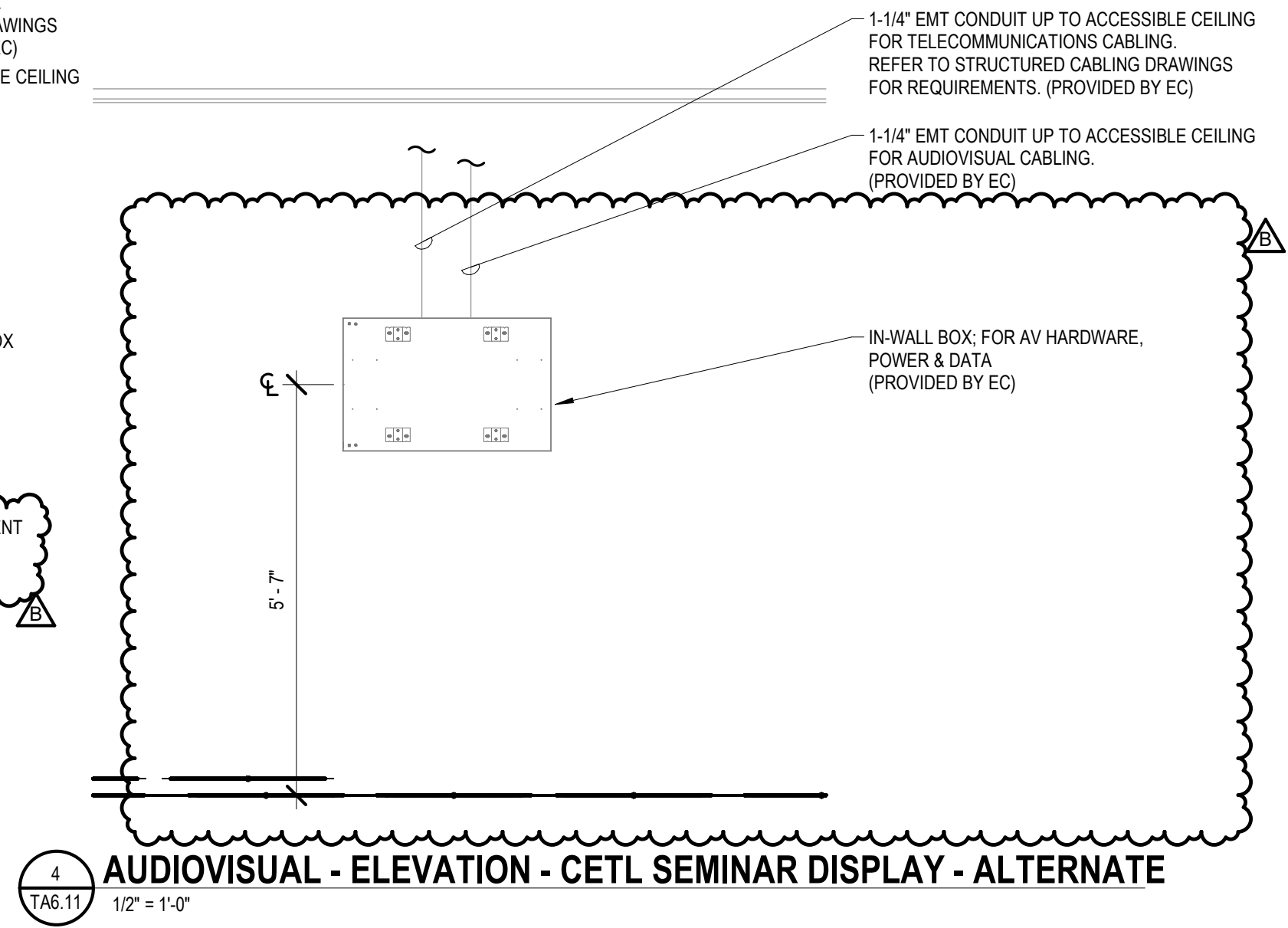
1 AUDIOVISUAL - ENLARGED PLAN - CETL SEMINAR ROOM  
1/4" = 1'-0"



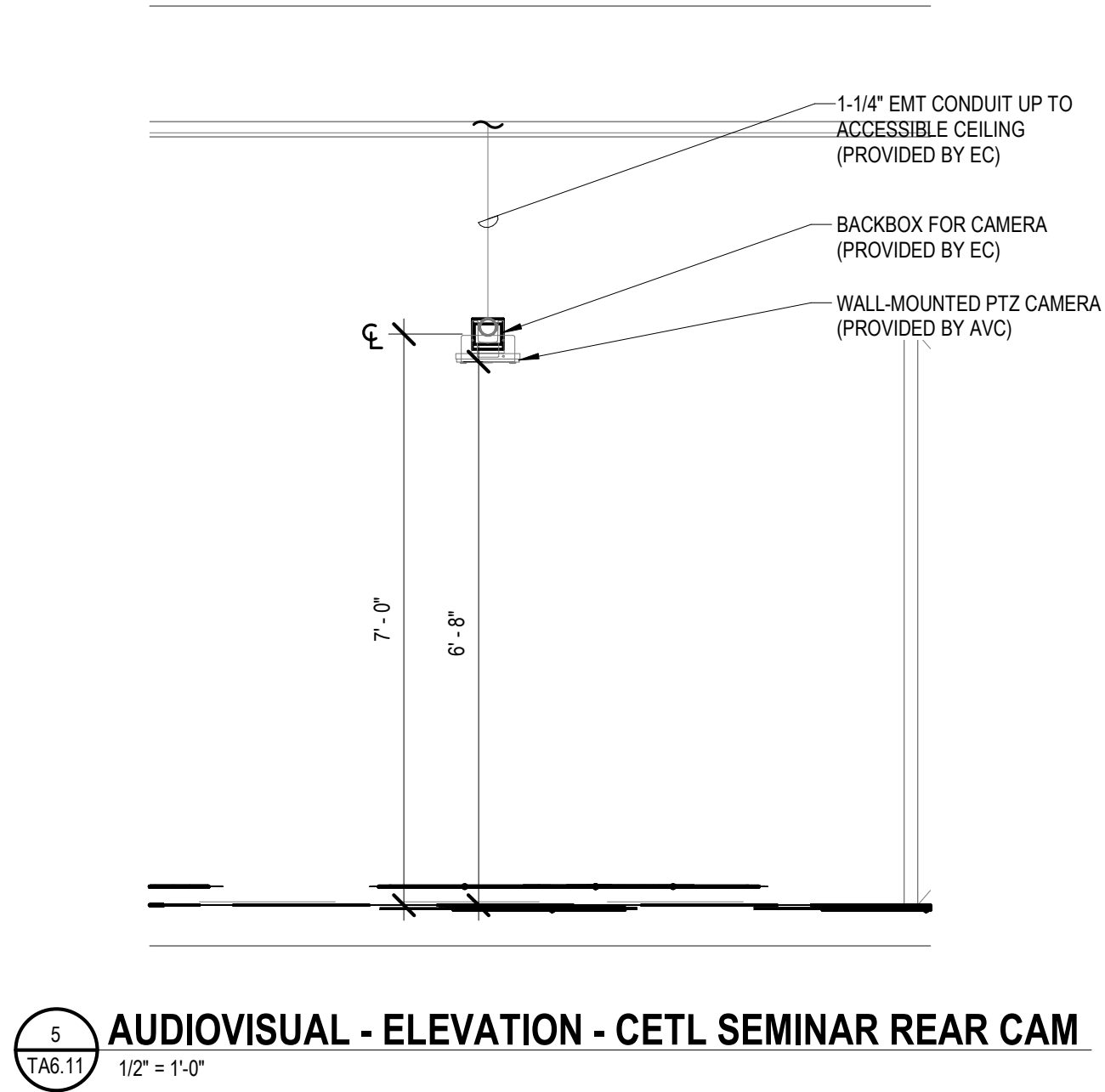
2 AUDIOVISUAL - ENLARGED RCP - CETL SEMINAR ROOM  
1/4" = 1'-0"



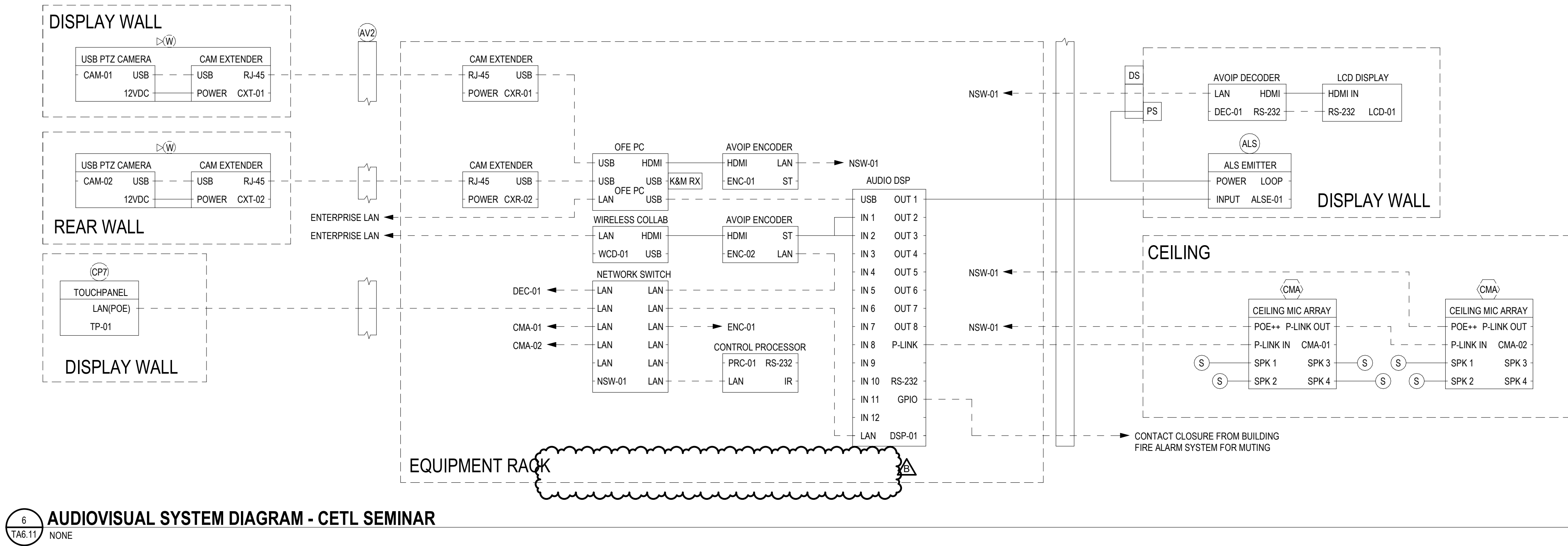
3 AUDIOVISUAL - ELEVATION - CETL SEMINAR DISPLAY  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL - ELEVATION - CETL SEMINAR DISPLAY - ALTERNATE  
1/2" = 1'-0"



5 AUDIOVISUAL - ELEVATION - CETL SEMINAR REAR CAM  
1/2" = 1'-0"



6 AUDIOVISUAL SYSTEM DIAGRAM - CETL SEMINAR  
NONE

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**PROJECT  
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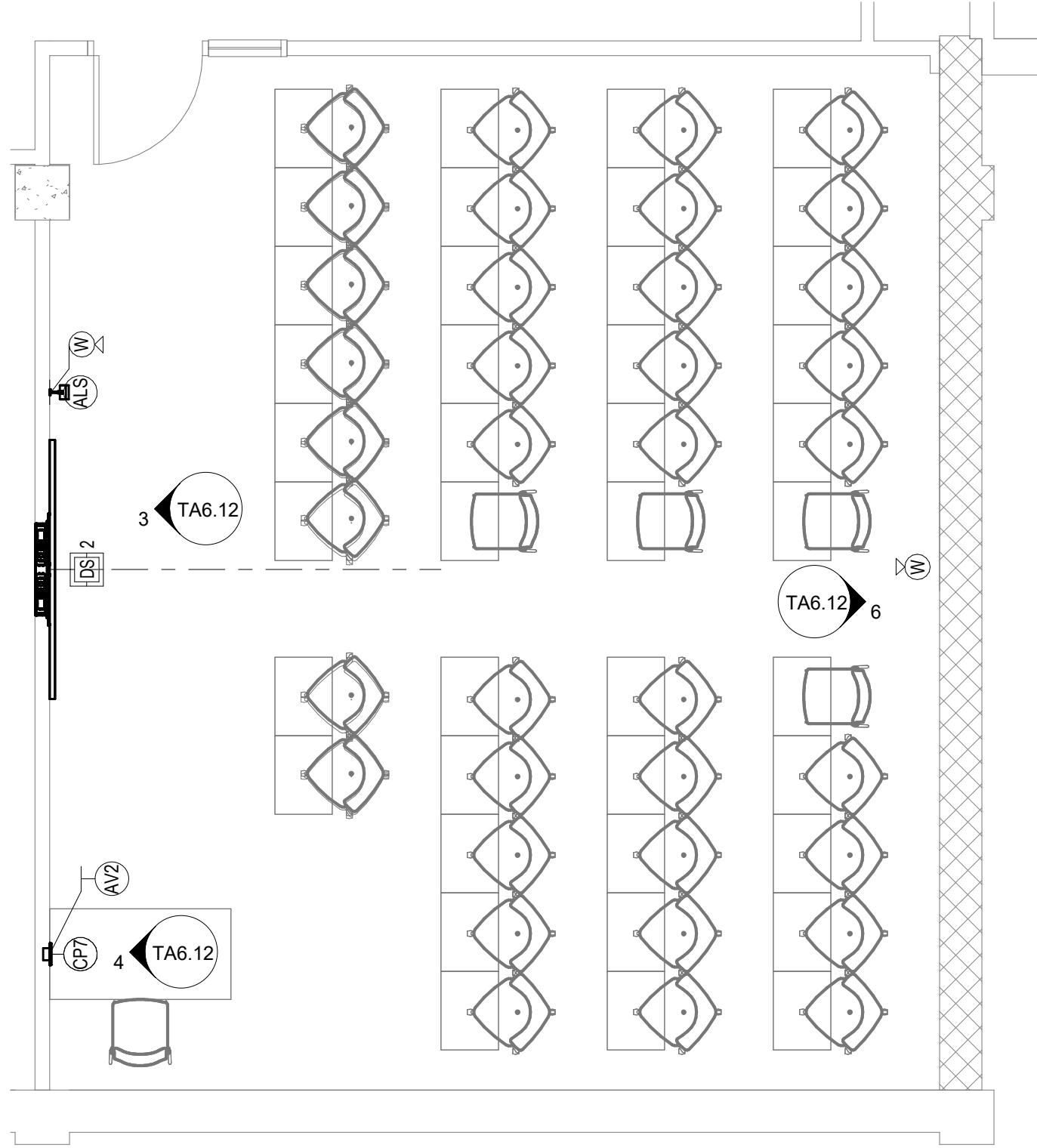
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PROJECT NUMBER: **22031600**  
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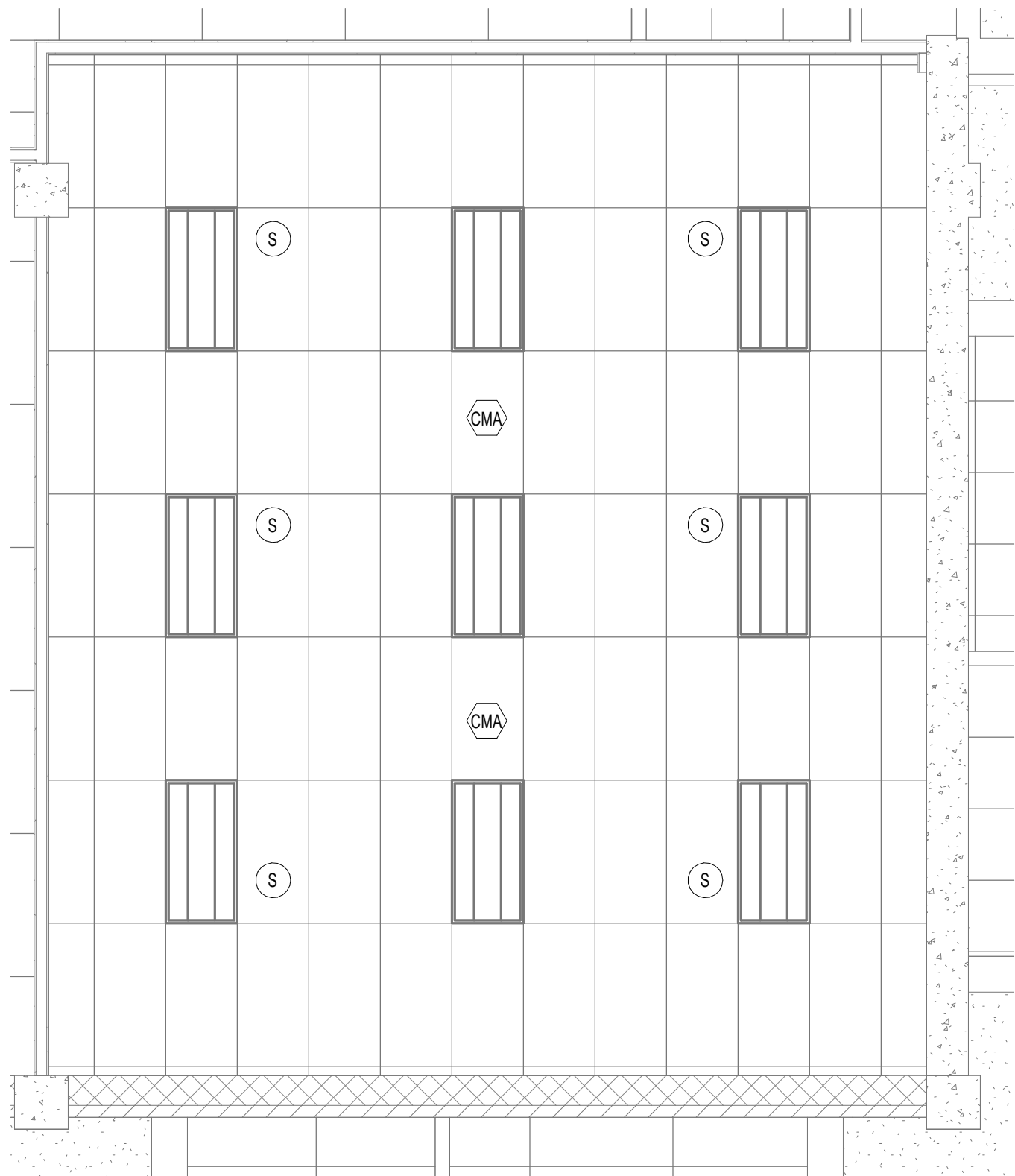
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**AUDIOVISUAL -  
ENLARGED  
PLANS - CETL  
SEMINAR ROOM**

SHEET NUMBER:  
**TA6.11**



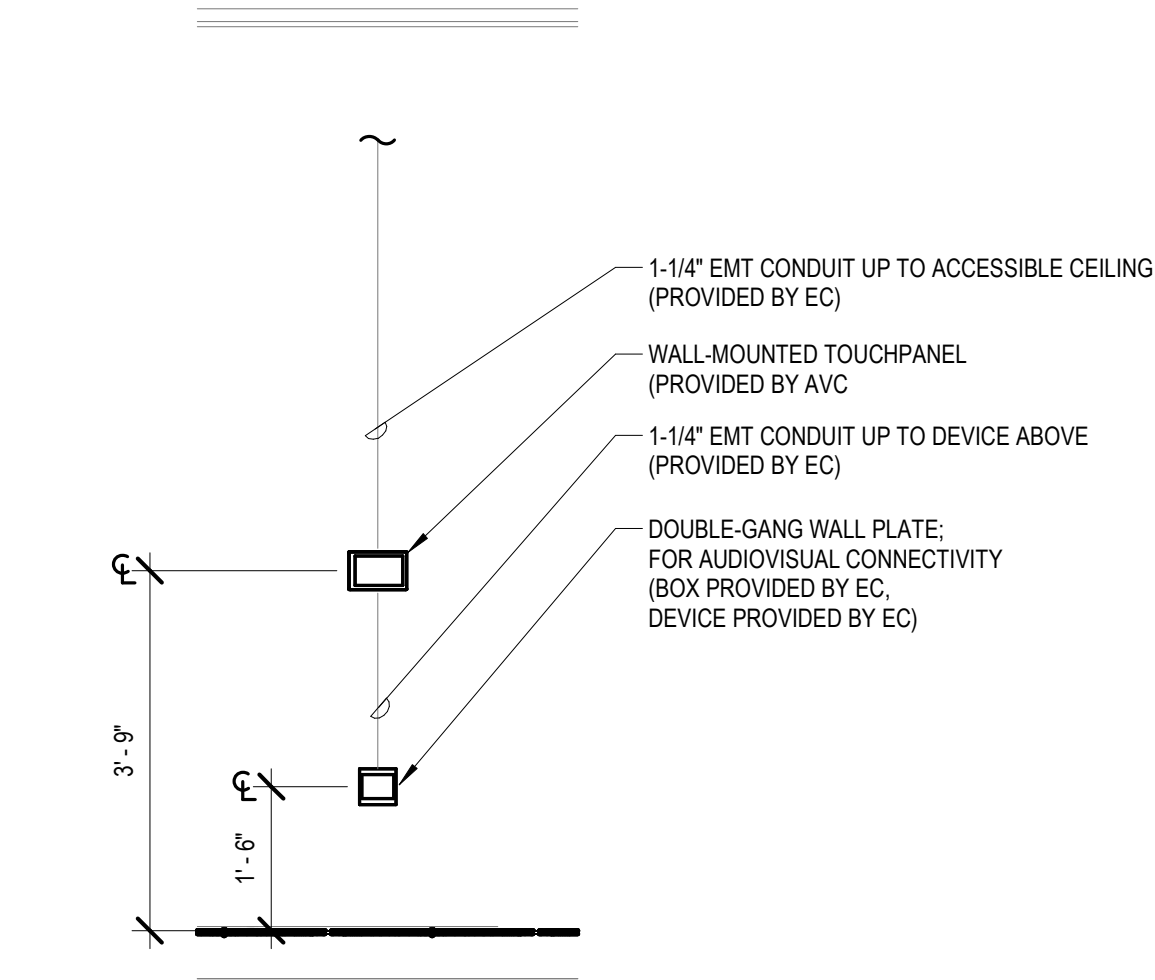
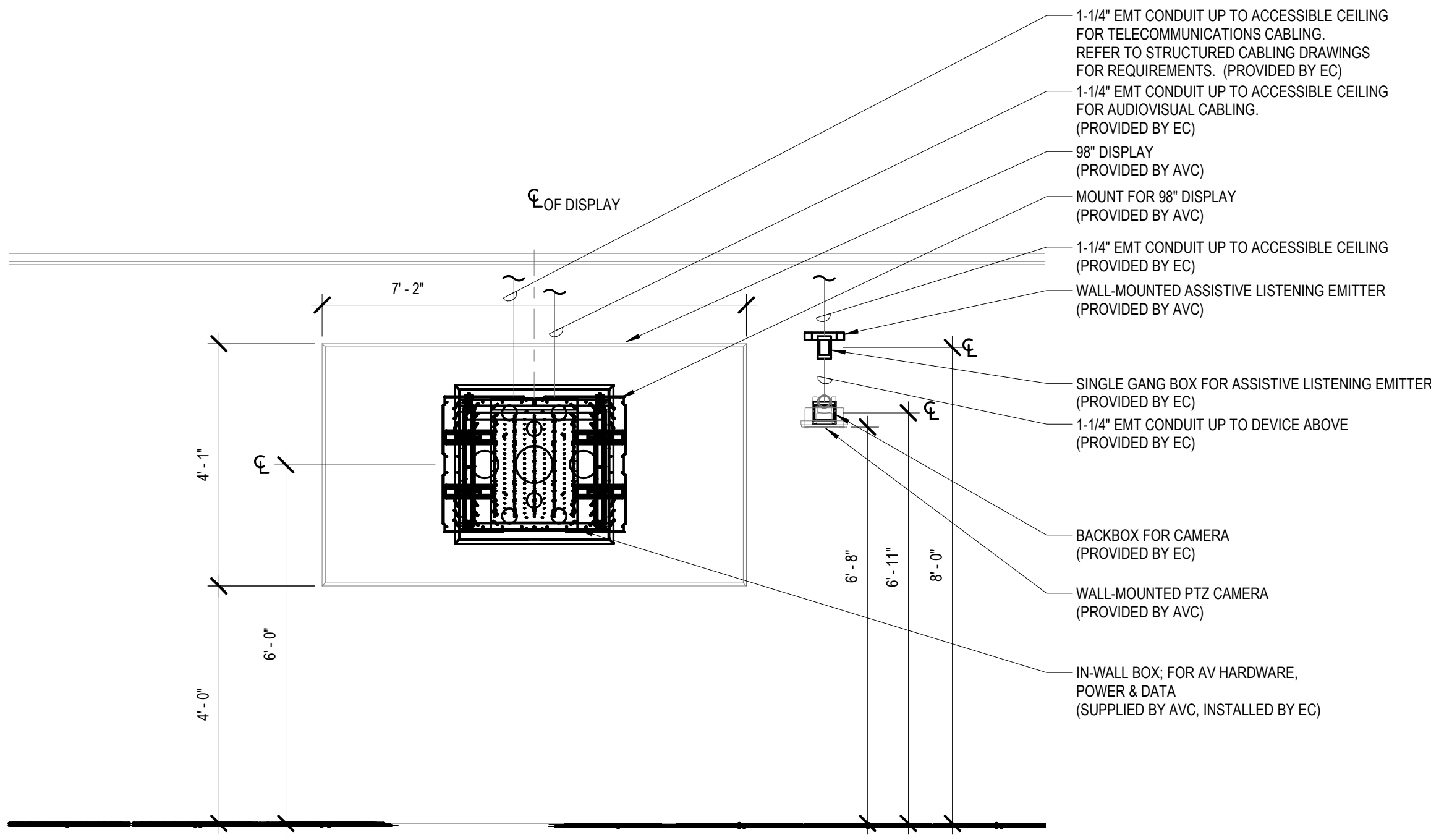


1 AUDIOVISUAL - ENLARGED PLAN - CLASSROOM G26  
1/4" = 1'-0"

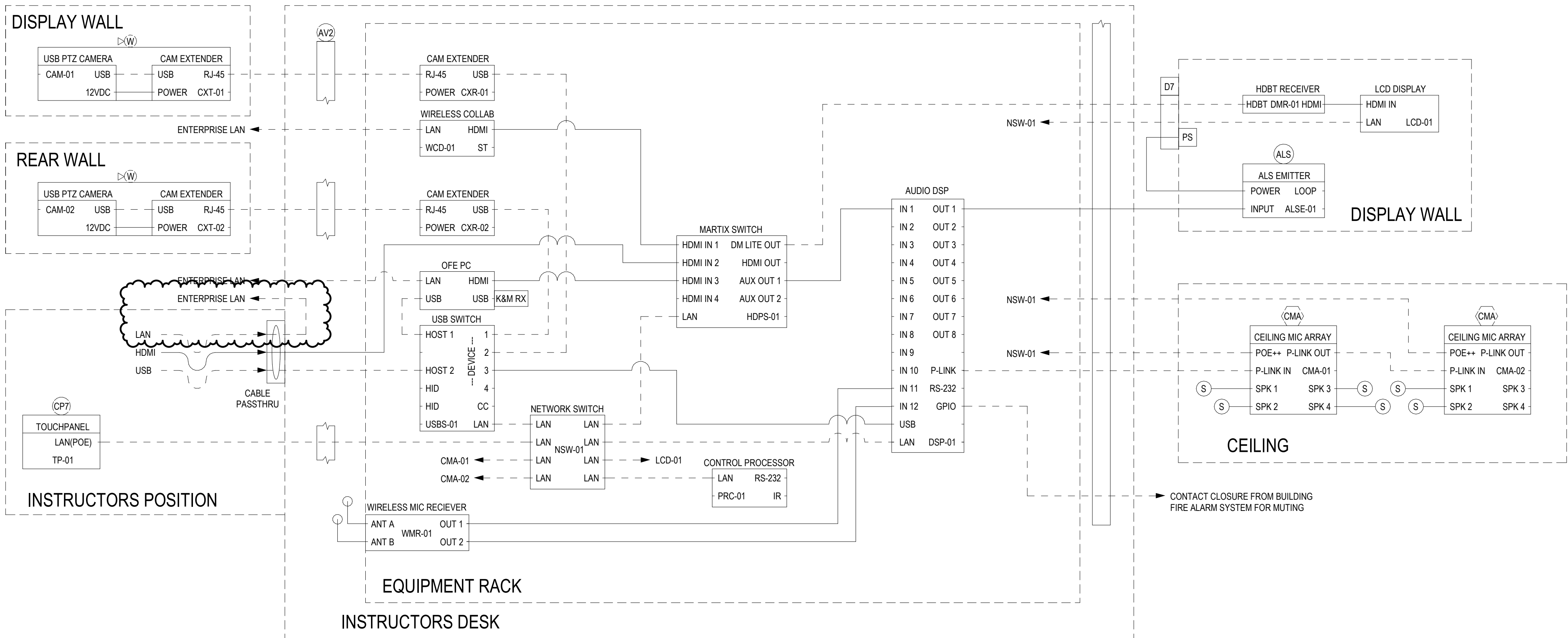


2 AUDIOVISUAL - ENLARGED RCP - CLASSROOM G26  
1/4" = 1'-0"

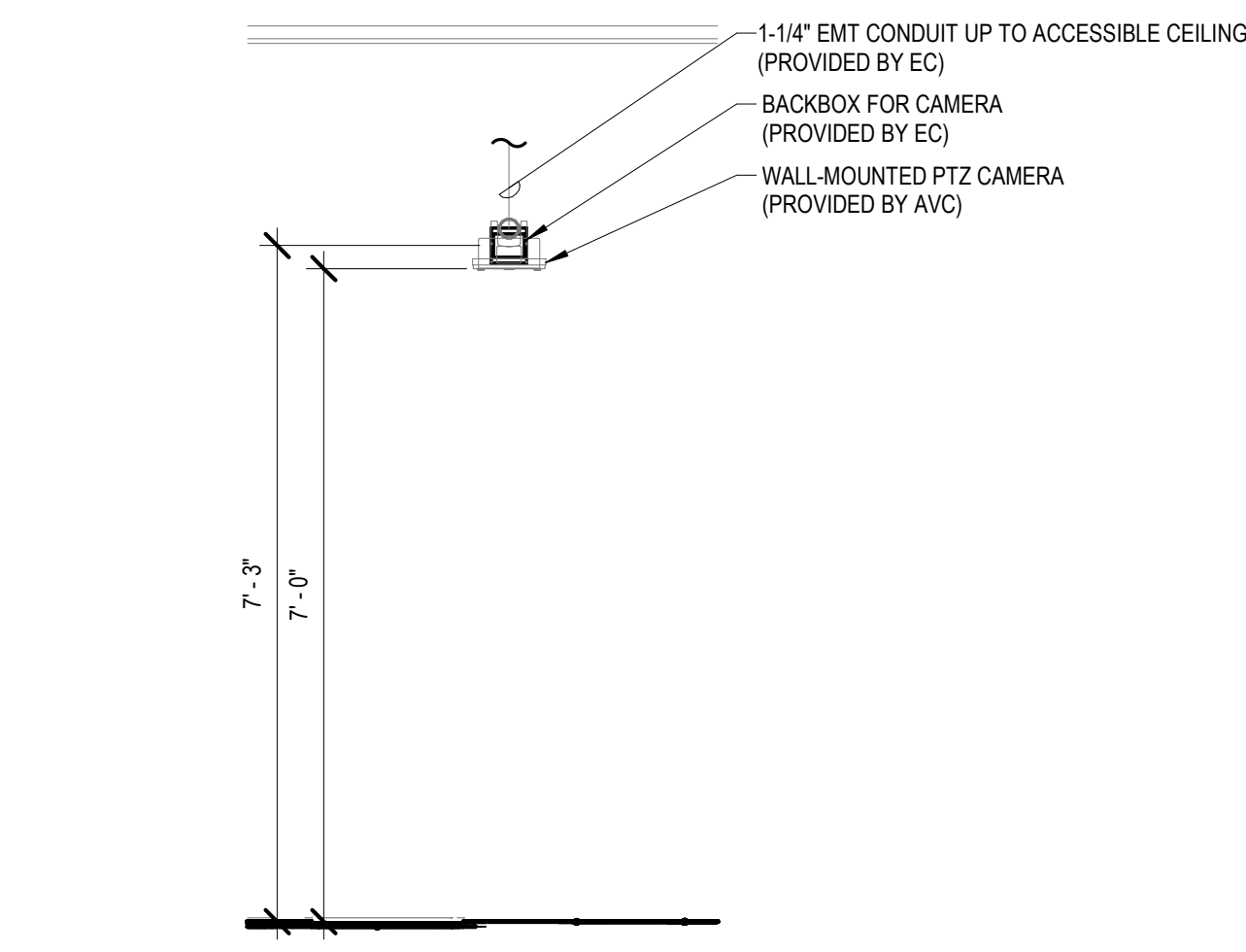
3 AUDIOVISUAL - ELEVATION - CLASSROOM G26 FRONT DISPLAY  
1/2" = 1'-0"  
NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL - ELEVATION - CLASSROOM G26 TEACHERS DESK  
1/2" = 1'-0"



5 AUDIOVISUAL SYSTEM DIAGRAM - CLASSROOM G26  
NONE



6 AUDIOVISUAL - ELEVATION - CLASSROOM G26 REAR CAM  
1/2" = 1'-0"

LEAVE OPEN FOR  
NJ DCA STAMP  
OF APPROVAL  
THIS SPACE IS RESERVED FOR  
NJDCAS ELECTRONIC  
RELEASE STAMPS. THIS IS TO  
REMAIN COMPLETELY BLANK.  
BOX DIMENSIONS IS 3" WIDTH  
BY 3" HEIGHT.

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CLIENT:  
**THE COLLEGE OF NEW  
JERSEY**  
2000 PENNINGTON ROAD  
EWING, NJ

PROJECT TEAM  
**BALA**  
ENGINEERS  
1815 MARKET STREET, SUITE 200, PHILADELPHIA, PA 19103  
PHILADELPHIA, PA 19103  
BALA.COM

**ROScoe HALL LOWER LEVEL  
INTERIOR RENOVATION**  
2000 PENNINGTON ROAD EWING, NJ  
THE COLLEGE OF NEW JERSEY

**PROJECT  
NORTH**

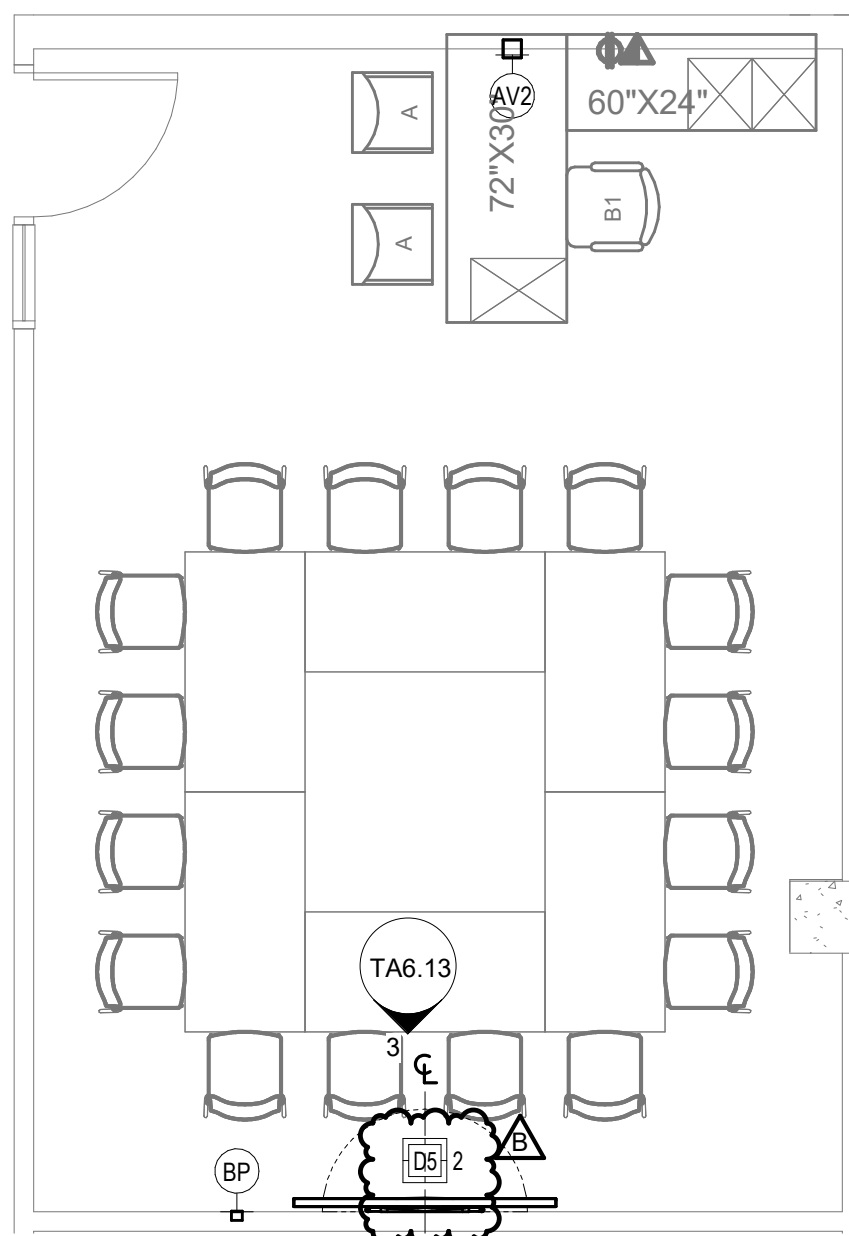
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1	2024.05.16	DISCUSSION DOCUMENT REVIEW	EC	EC
2	2024.05.16	85% CONSTRUCTION DOCUMENT REVIEW	EC	EC
3	2024.06.21	100% CDH ISSUED FOR PERMIT	EC	EC
4	2024.07.26	ISSUED FOR BID	EC	EC
5	2024.08.26	ADDITIONAL ISSUE FOR CONSTRUCTION	EC	EC
6	2024.09.23	ADDITIONAL B	EC	EC

NJDCA REF NUMBER:  
PROJECT NUMBER: **22031600**  
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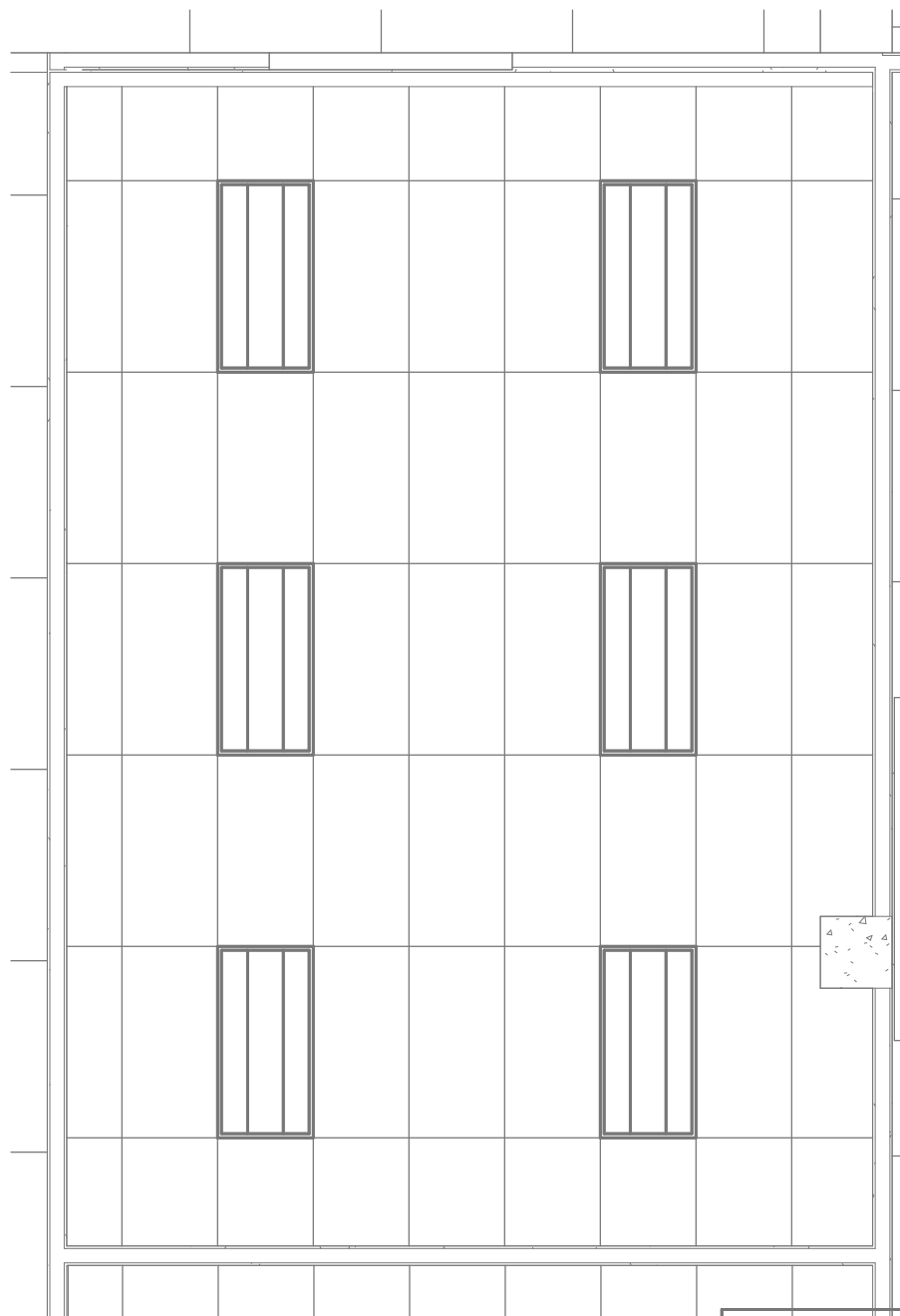
SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS -  
CLASSROOM  
G26**

SHEET NUMBER:  
**TA6.12**

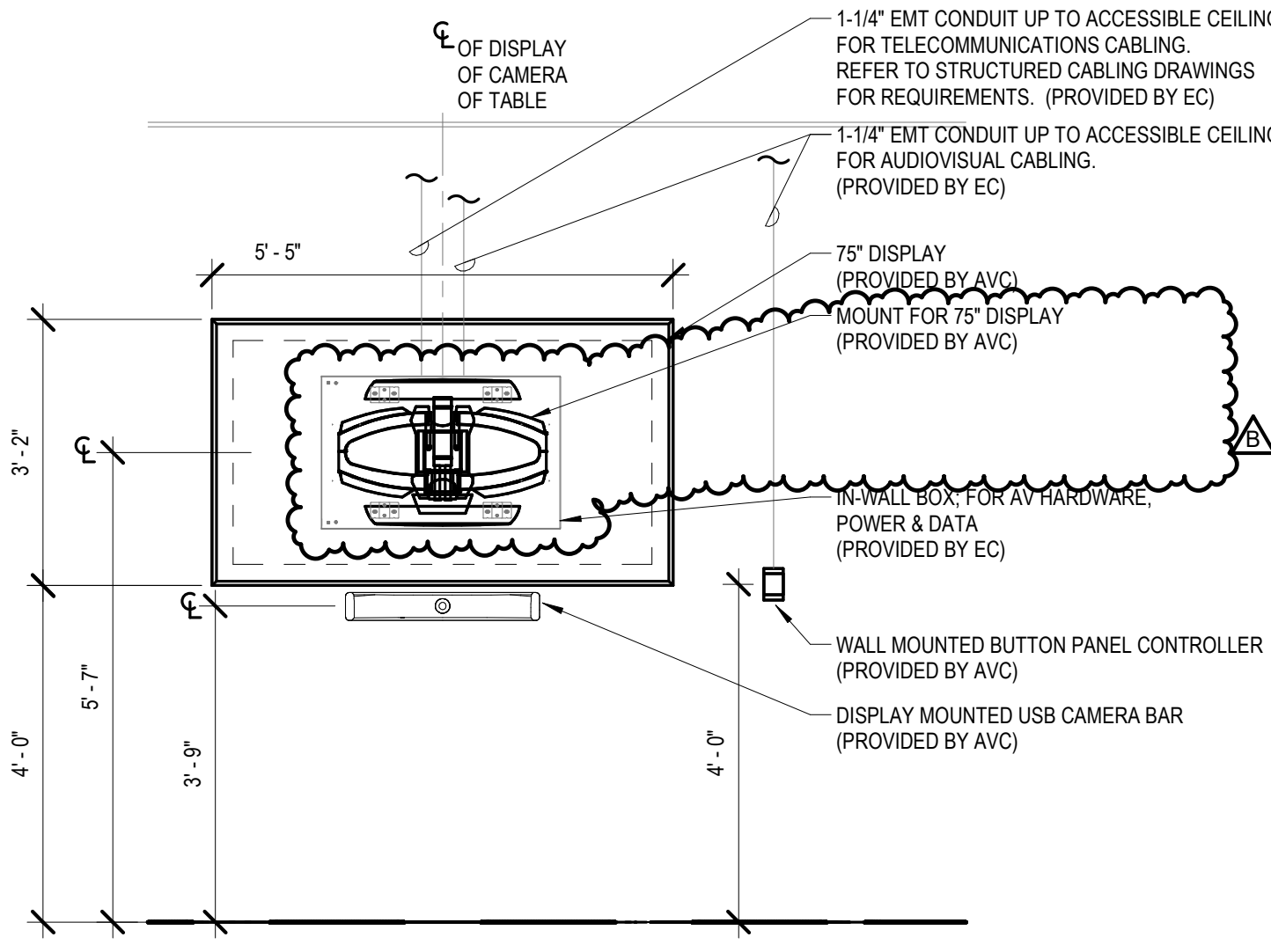




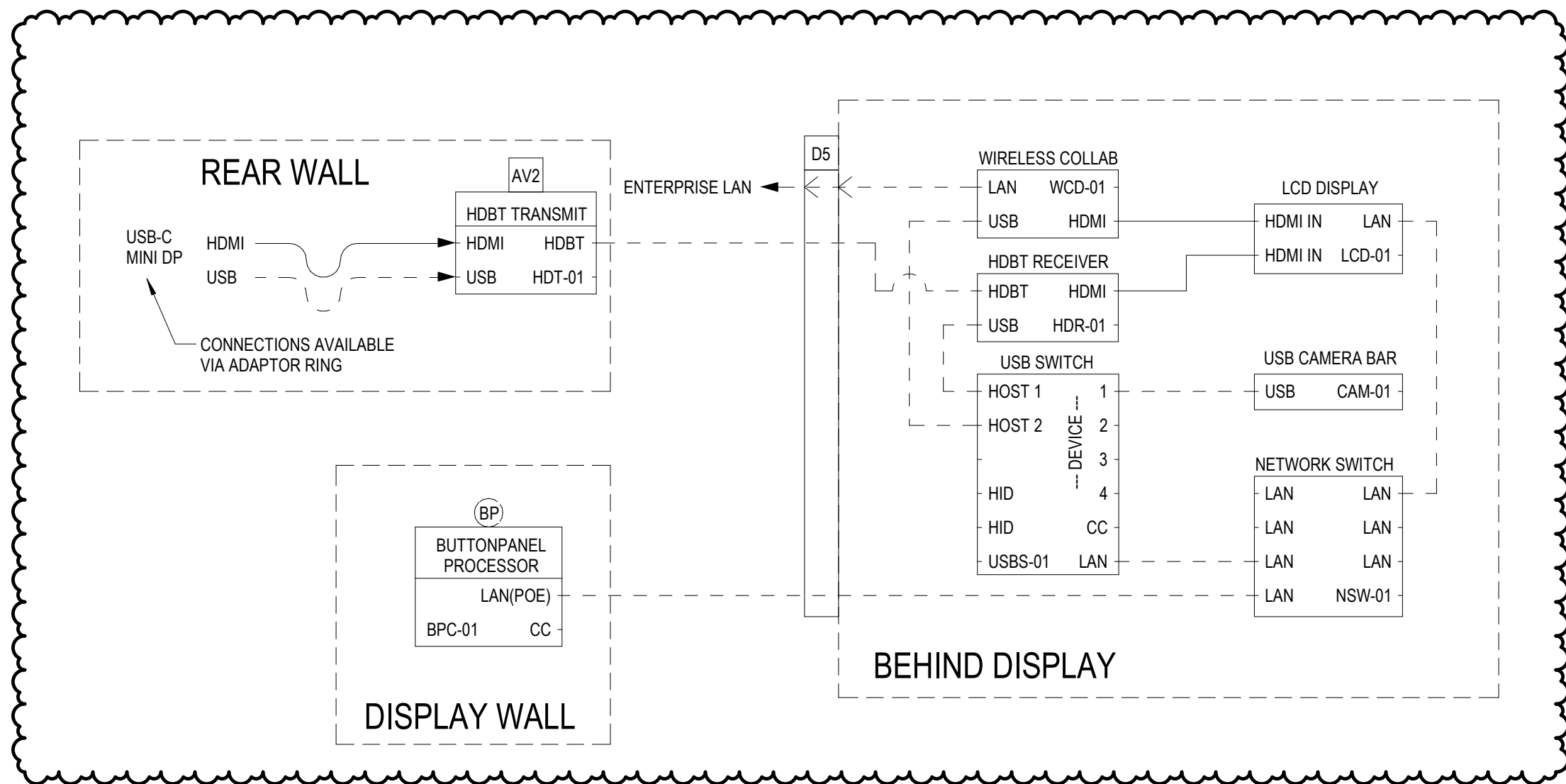
1 AUDIOVISUAL - ENLARGED PLAN - MENTORING CENTER  
1/4" = 1'-0"



2 AUDIOVISUAL - ENLARGED RCP - MENTORING CENTER  
1/4" = 1'-0" NOTE: NO CEILING-MOUNTED AUDIOVISUAL HARDWARE IN THIS SPACE.



3 AUDIOVISUAL - ELEVATION - MENTORING CENTER  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4".



4 AUDIOVISUAL SYSTEM DIAGRAM - MENTORING CENTER  
NONE

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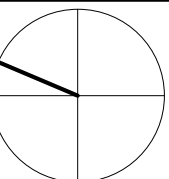
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**BALA**  
ENGINEERS

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**PROJECT  
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REV	DATE	DESCRIPTION	DRW	CHK
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NJDCA REF NUMBER: 22031600

PROJECT NUMBER: 22031600

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SHEET TITLE:

**AUDIOVISUAL -**

**ENLARGED**

**PLANS -**

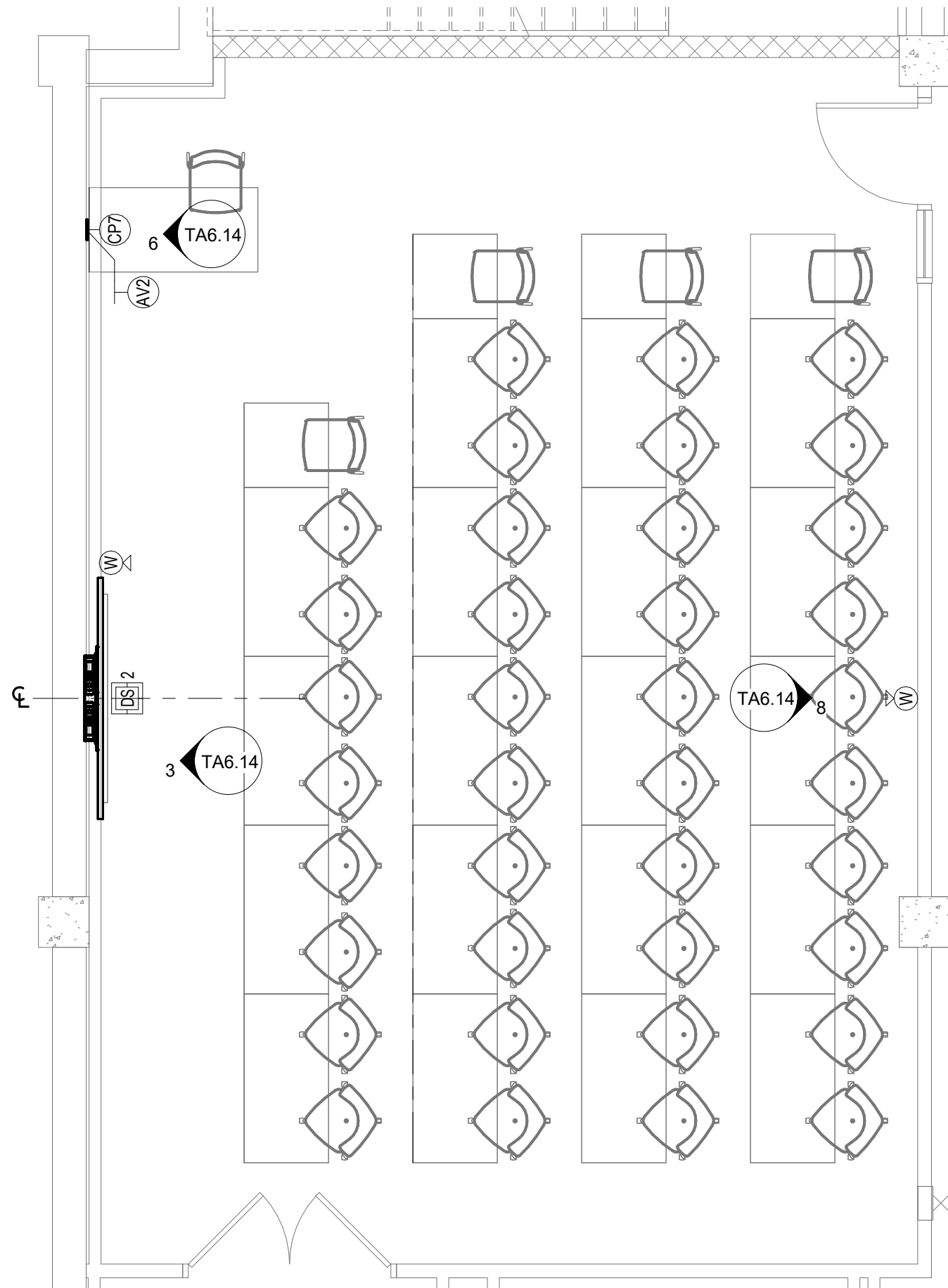
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**CENTER**

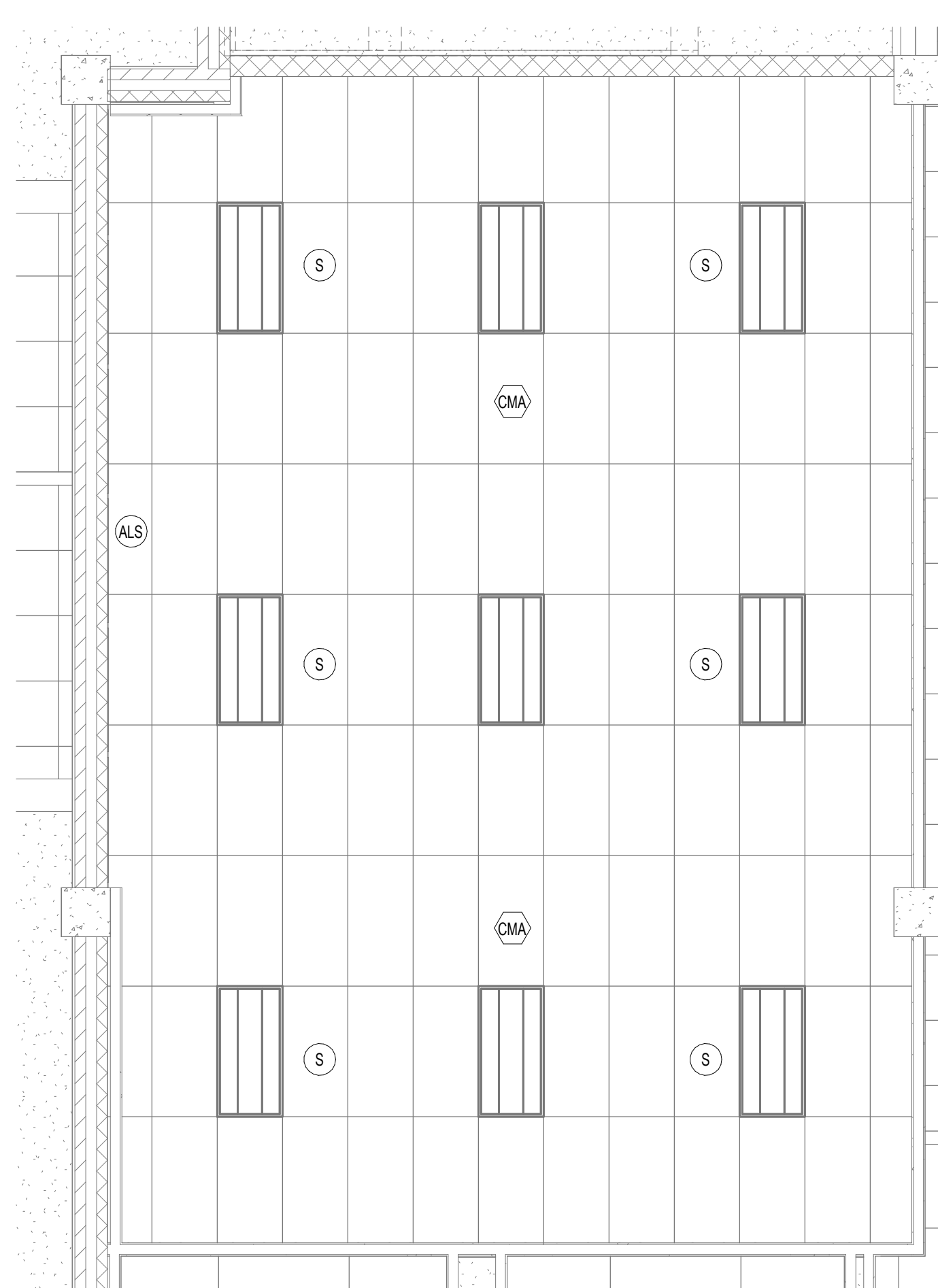
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**TA6.13**

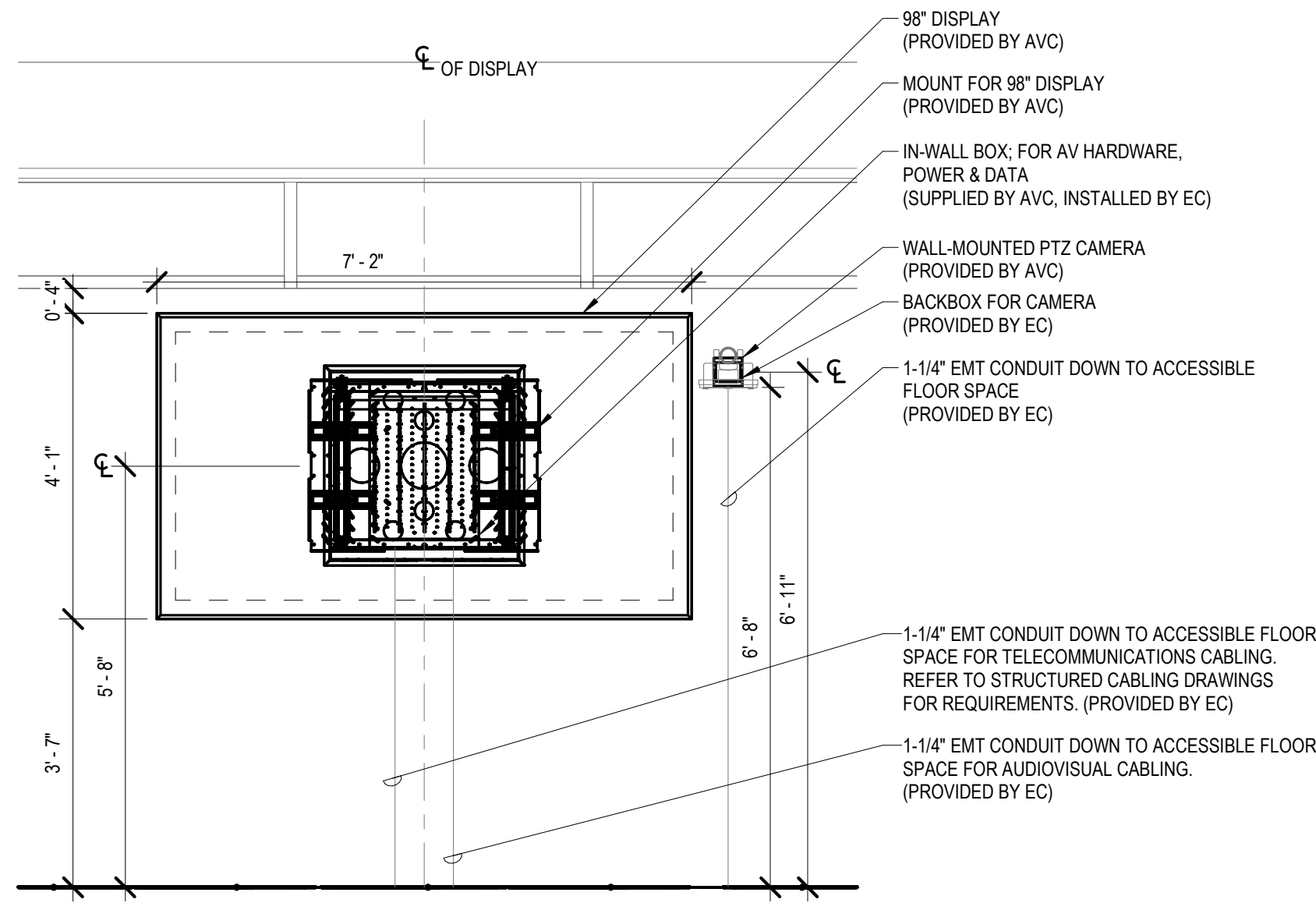




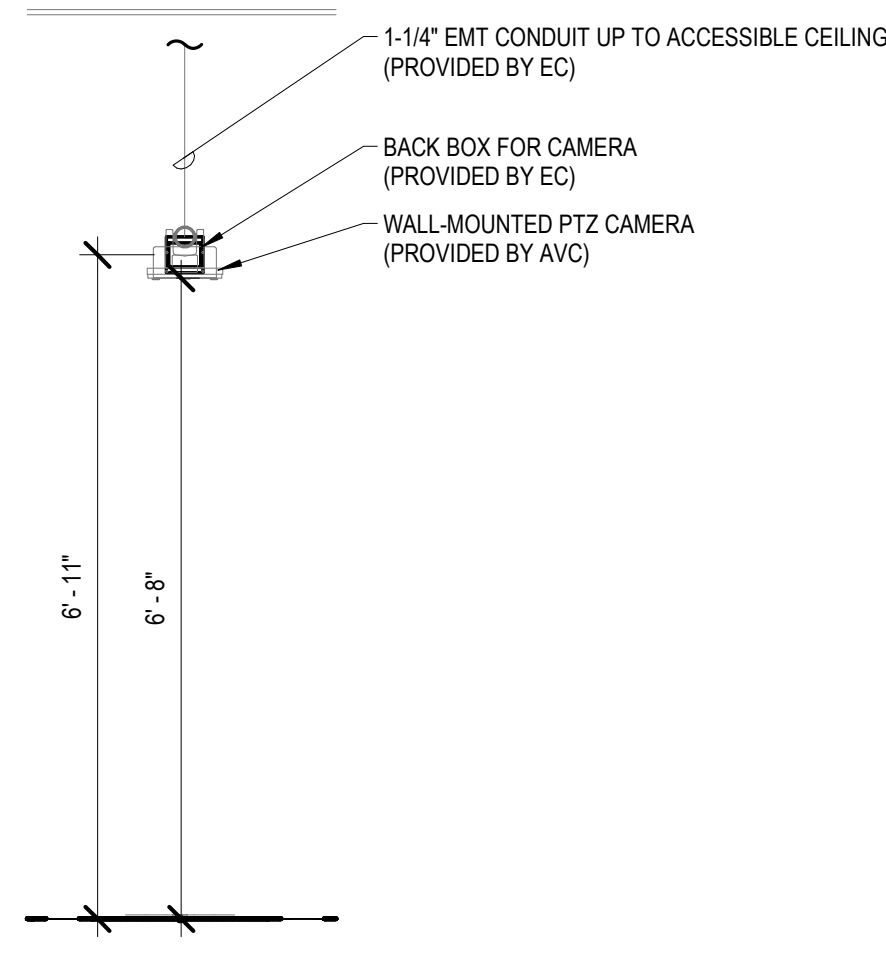
1 AUDIOVISUAL - ENLARGED PLAN - CLASSROOM G15/G16  
1/4" = 1'-0"



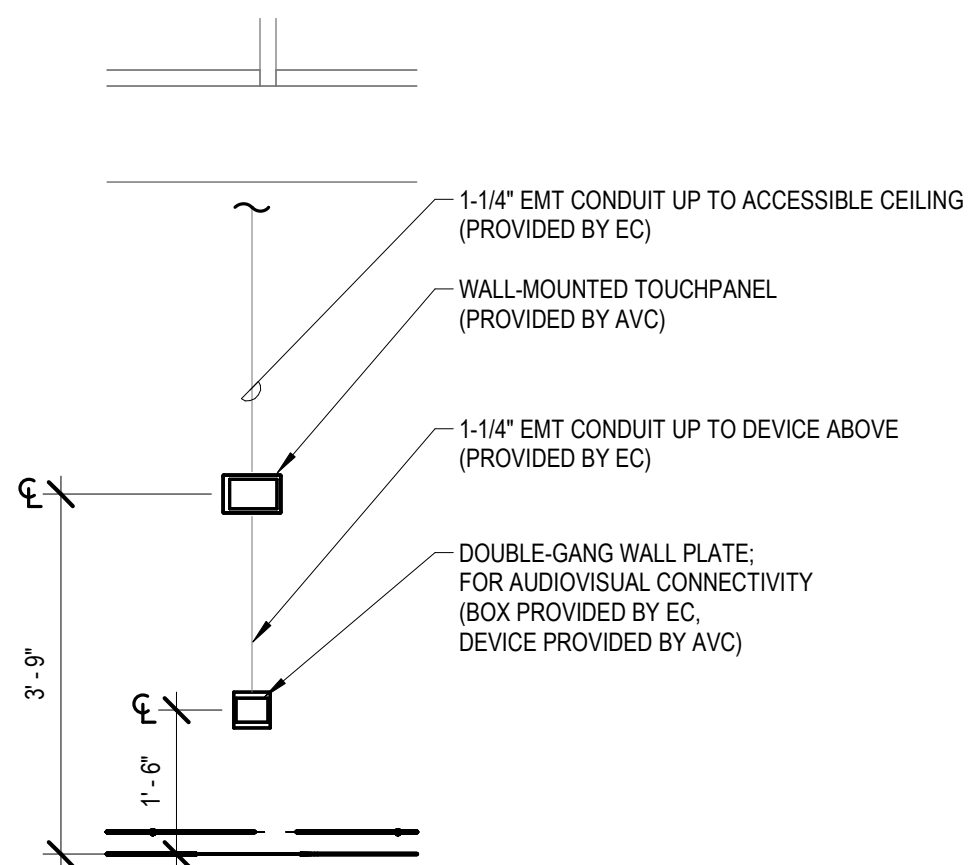
2 AUDIOVISUAL - ENLARGED RCP - CLASSROOM G15/G16  
1/4" = 1'-0"



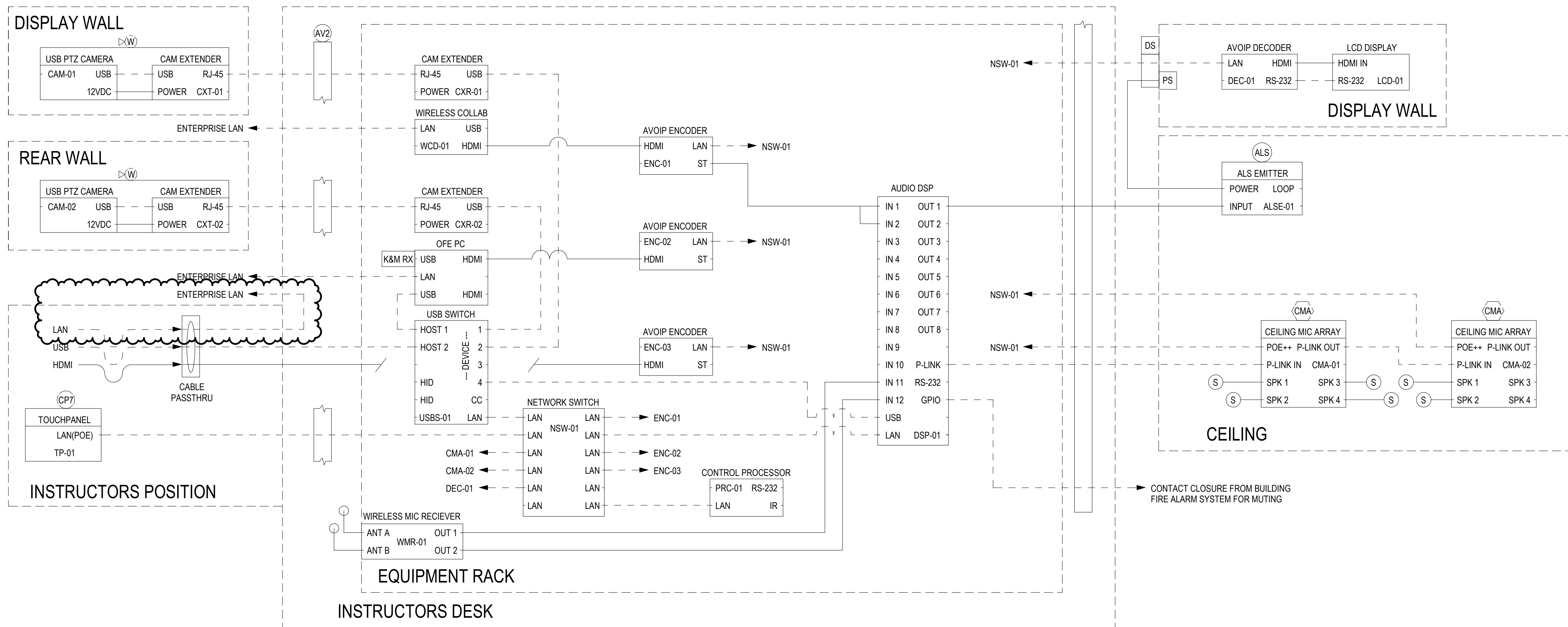
3 AUDIOVISUAL - ELEVATION - CLASSROOM G15/G16  
1/2" = 1'-0" NOTE: DISPLAY ASSEMBLY DEPTH IS LESS THAN 4"



4 AUDIOVISUAL - ELEVATION - CLASSROOM G15/G16 REAR CAM  
1/2" = 1'-0"



5 AUDIOVISUAL - ELEVATION - CLASSROOM G15/G16 TEACHERS DESK  
1/2" = 1'-0"



6 AUDIOVISUAL SYSTEM DIAGRAM - CLASSROOM G15/G16 - TYPICAL  
NONE

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UNIVERSITY MICROFILMS INTERNATIONAL  
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ANN ARBOR MI 48106  
USA  
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THE COLLEGE OF NEW JERSEY

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REV	DATE	DESCRIPTION	BY	CHK
1	2024.05.16	DESIGN DOCUMENT REVIEW	BSY	CONSTRUCTION DOCUMENT REVIEW
2	2024.06.21	100% CDR ISSUED FOR PERMIT	BSY	ISSUED FOR BID
3	2024.07.26	ADDITIONAL ISSUE FOR CONSTRUCTION	BSY	ADDITIONAL B
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PROJECT NUMBER: 22031600  
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SHEET TITLE:  
**AUDIOVISUAL -  
ENLARGED  
PLANS -  
CLASSROOM  
G15/G16**

SHEET NUMBER:  
**TA6.14**