



Centennial Hall Partial Room Air Conditioning Project

TCNJ Advertised Bid # AB200023

PROJECT REQUIREMENTS

SCOPE OF WORK

DRAWINGS

March 3, 2020



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 **March 3, 2020**. Contact person regarding placement of ad is Roselle Horodeski (609) 771-2894.

**THE COLLEGE OF NEW JERSEY
ADVERTISEMENT FOR BIDS
BID #AB200023**

Under the provisions of the State College Contracts Law, Chapter 64 of Title 18-A, The College of New Jersey will receive sealed bids for the **Centennial Hall Partial Room Air-Conditioning Project** until **2:00 P.M. on the 3rd day of April, 2020** 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.

The project will be bid as a Single Lump Sum.

No bidder may submit more than one bid.

Bid Documents may be obtained on/after **March 3, 2020** via our website (www.tcnj.edu/~budfin/).

A **strongly encouraged pre-bid conference/on-site inspection** is scheduled on **March 11, 2020 at 10:00 A.M.** in Room 203 of the Administrative Services Building, located on The College's Ewing Township, New Jersey campus on Route 31 (Pennington Road).

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); Executive Order 117 and P.L. 2005 Chapter 51 (N.J.S.A. 19:44a-1 et seq.) and all amendments thereto

A bid bond is required in the amount of 10% of the total bid. Bid bond shall consist of a certified check or cashiers 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.

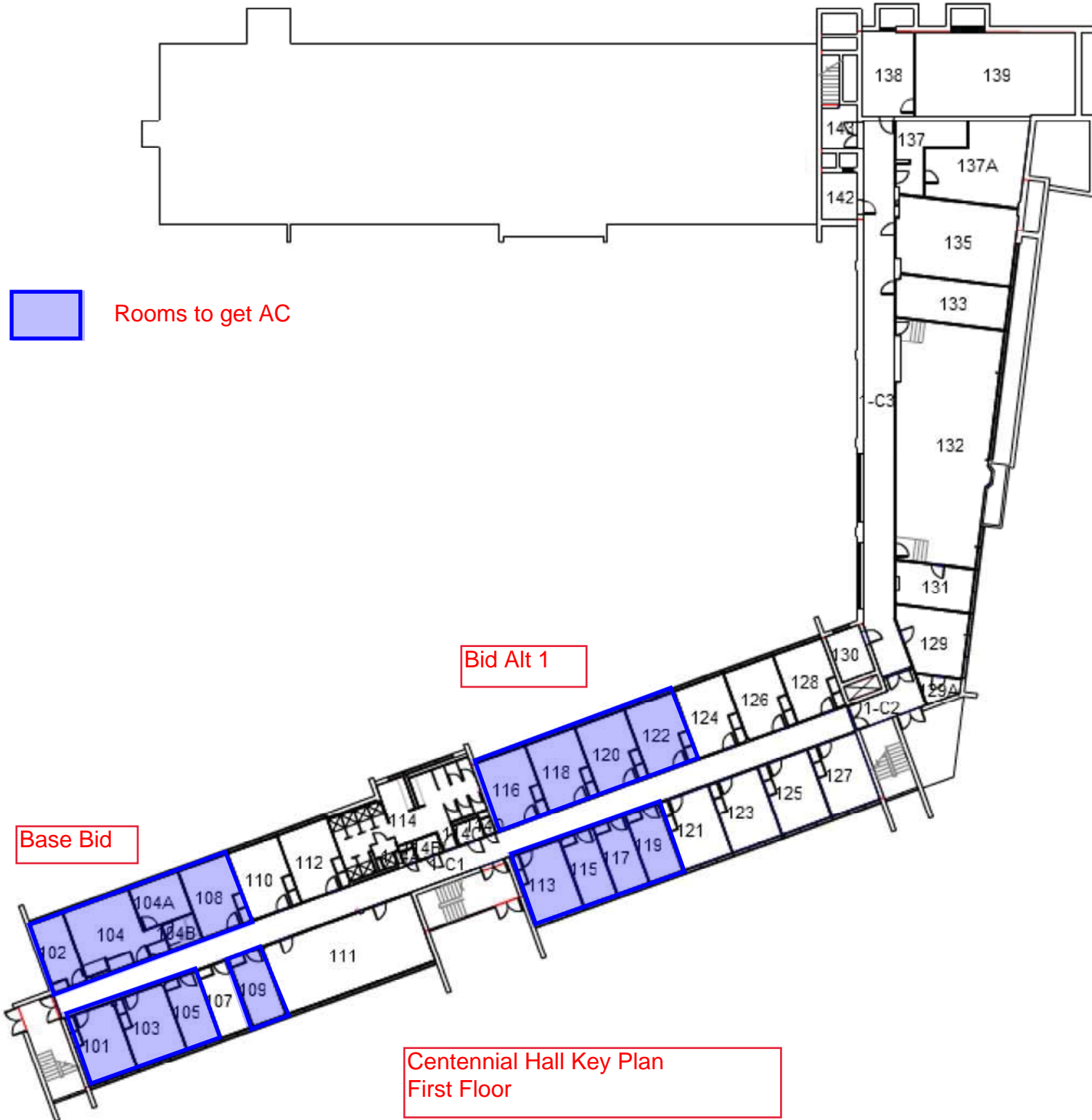


Centennial Hall Partial Room Air-Conditioning

MILESTONE SCHEDULE

3/3/2020

Bid Released	3-Mar-20
Pre-Bid/Site Visit (10:00 am)	11-Mar-20
Cut off for questions	19-Mar-20
Addendum issued	26-Mar-20
Bids Received	3-Apr-20
Notice of Intent to Award issued	9-Apr-20
End of Protest Period	16-Apr-20
Notice to proceed issued by	23-Apr-20
Pre-Construction/Submittals	27-Apr-20
Construction Begins in Field	8-Jun-20
Substantial Completion	7-Aug-20
Project Closeout	21-Sep-20

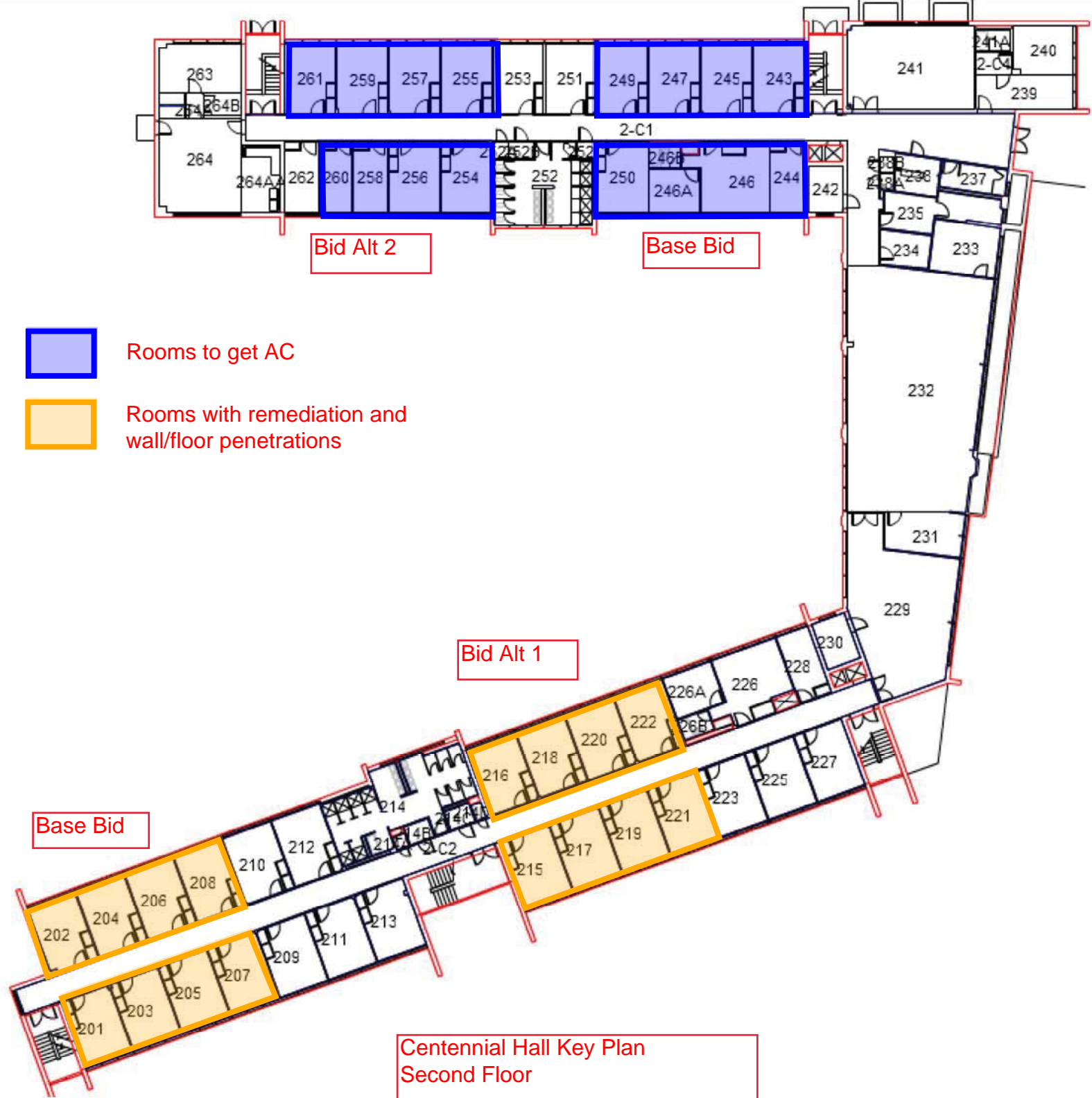


Rooms to get AC

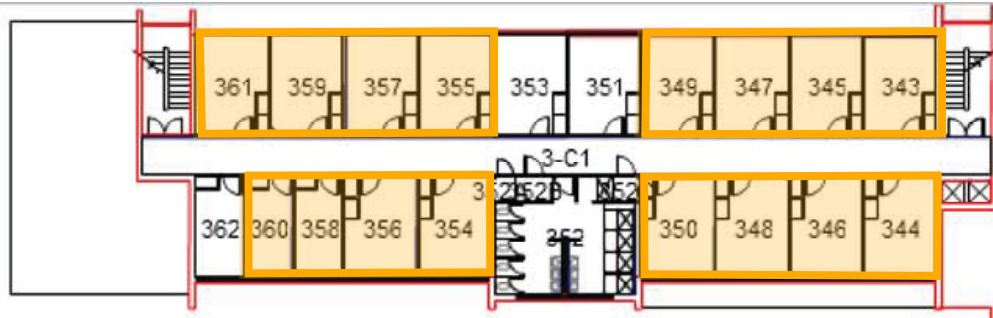
Bid Alt 1

Base Bid

Centennial Hall Key Plan
First Floor



Centennial Hall Key Plan
Second Floor

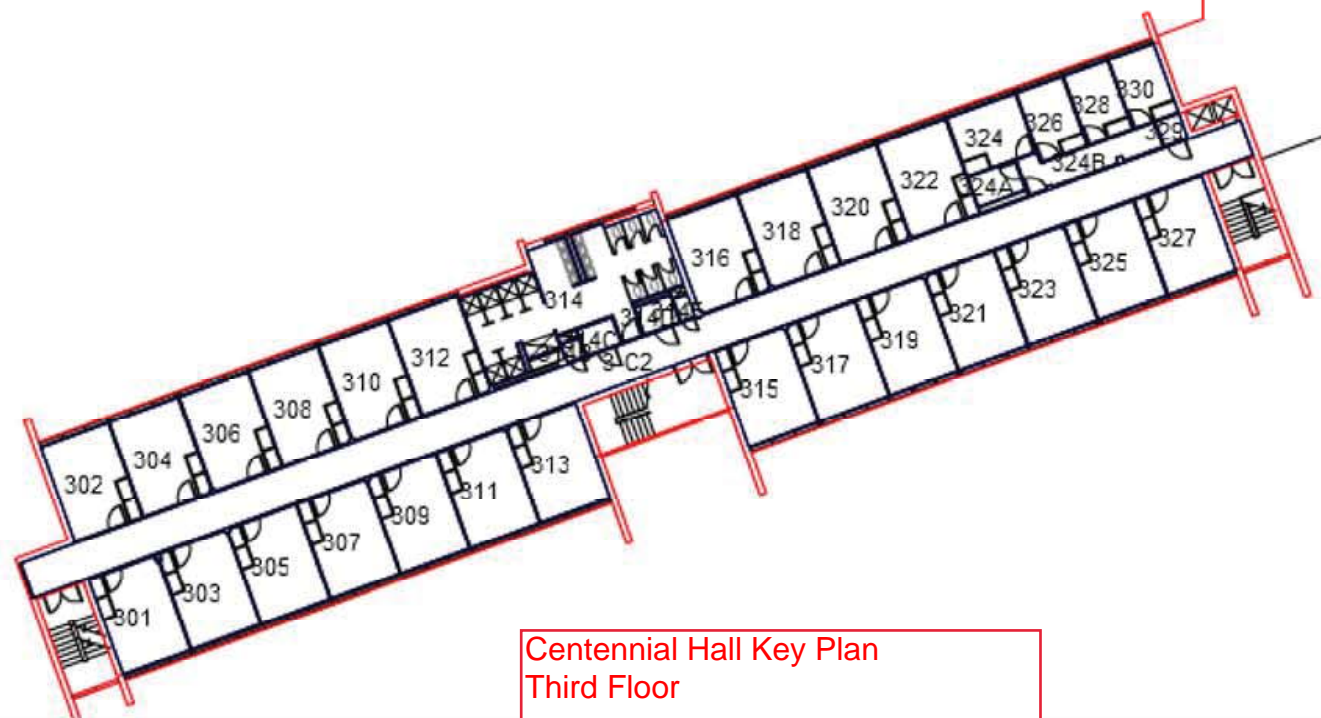


Bid Alt 2

Base Bid



Rooms with remediation and wall/floor penetrations



Centennial Hall Key Plan
Third Floor

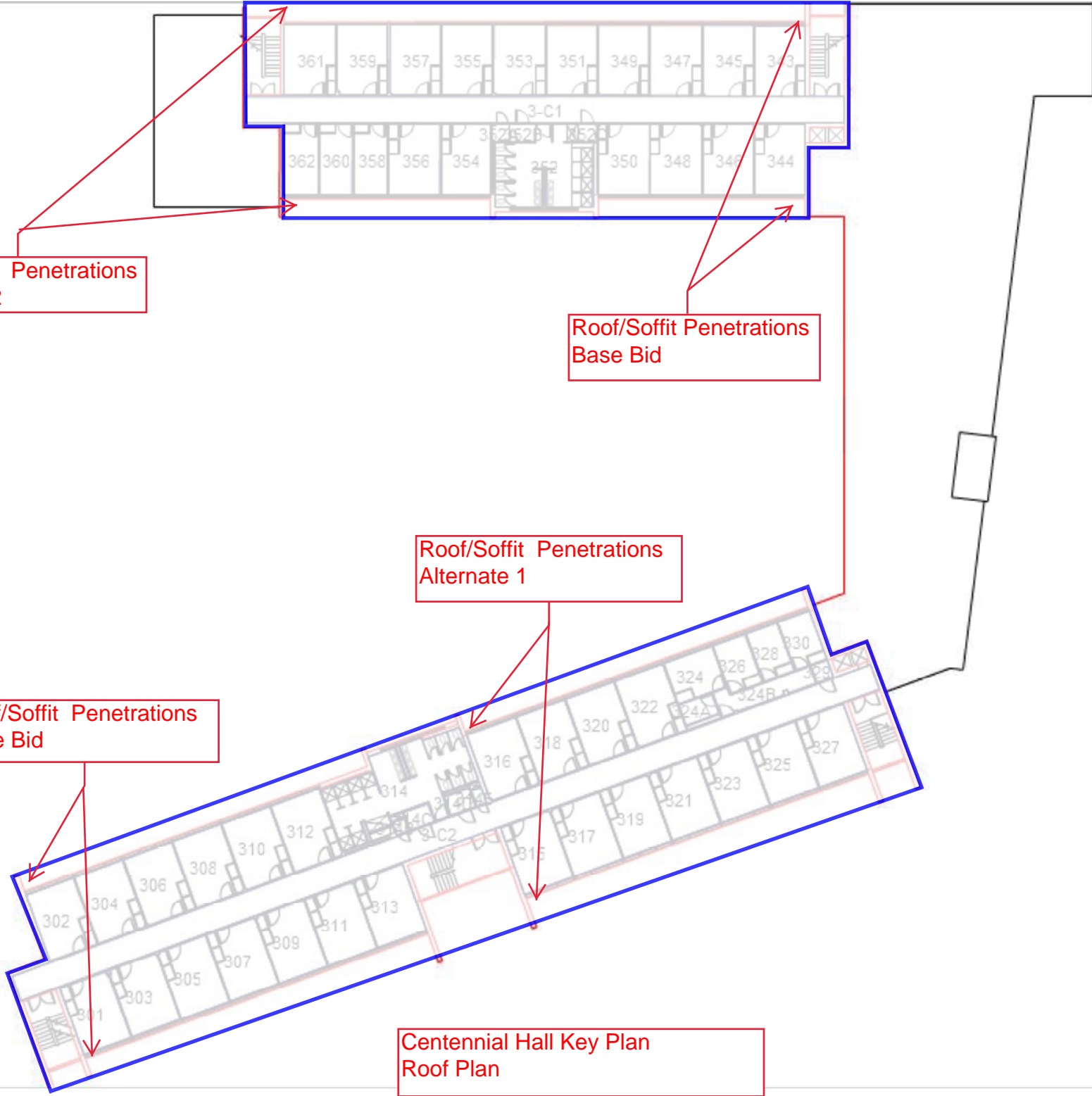
Roof/Soffit Penetrations
Alternate 2

Roof/Soffit Penetrations
Base Bid

Roof/Soffit Penetrations
Alternate 1

Roof/Soffit Penetrations
Base Bid

Centennial Hall Key Plan
Roof Plan



**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: AB200023
Bid Due Date: April 3, 2020

Project Name: Centennial Hall Partial Room Air Conditioning

BIDDER INFORMATION

Firm Name:

Telephone Number:

Contact Person:

Fax Number:

Address:

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.
 - (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 the addition of VRF cooling equipment for a portion of the building. The project includes 16 indoor units in selected rooms, connected to two (2) outdoor condensing units located on the roof. Refrigerant piping and electrical wiring is anticipated between the indoor and outdoor units.
 - A. See Specifications and Drawings for Details (included in RFP package).
 - B. 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”.
- B. Prevailing wage rates apply (Mercer County).
- C. Bid is to remain good for sixty (60) days after the Bid Due Date.

2. BOND REQUIREMENTS AND SURETY STANDARDS

- A. Bidder must submit with its bid a Certified Check in the amount of ten percent (10%) of the total bid, or a Bid Bond in the amount of ten percent (10%) of the total bid.
- B. 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.

3. 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 the notice of intent to award.
 - (1) The electrical contractor or subcontractor, as applicable, shall have a valid electrical license. (An electrical license is not required when the work is below 110Volt)
 - (2) The HVACR contractor or subcontractor, as applicable, shall have a valid HVACR license.
 - (3) The asbestos abatement contractor or subcontractor, as applicable, shall have a valid Asbestos Abatement Contractor license issued by the State of New Jersey Department of Labor and Workforce Development.

- 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.

4. SUBCONTRACTORS

- A.** Pursuant to New Jersey State Law (N.J.S.A. 18A-76.1), a Single Bid (Lump Sum) bidder discloses its subcontractors to whom the bidder intends to subcontract the work. The Subcontractor Information sheet is provided for this purpose.

- 5.** Under Executive Order 34, 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.

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.

State entities are required to report to the Division the ethnic and gender composition of the vendors with which those state entities do business.

6. Bidder completes Statement of Ownership Disclosure form and the Non-Collusion Affidavit form.
7. ~~Bidders are required to be registered with the New Jersey Department of Property Management and Construction (DPMC) and possess a DPMC C008 classification at the time of bid submission.~~

8. SET ASIDE PROGRAM FOR SMALL BUSINESS ENTERPRISE (SBE) – CONSTRUCTION

In accordance to N.J.A.C., 17:14-1.2 et seq. and Executive Order 71, signed by Governor James E. McGreevey in 2003, the College requires bidders to make a good faith effort to provide opportunities for Small Business Enterprises (SBE) to participate in the performance of this contract as subcontractors consistent with the overall goals established for construction services by the New Jersey Commerce and Economic Growth Commission (NJ Commerce).

SBE subcontracting goals are not applicable if the bidder is currently registered with NJ Commerce as an SBE firm.

9. PREVAILING WAGE AND PUBLIC WORKS CONTRACTOR REGISTRATION ACTS

- 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.
- 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.
- 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. As required by N.J.S.A. 34:11-56.27 and 56.28, this 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. The Contractor and its subcontractors must be registered with the New Jersey Department of Labor and Workforce Development (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 Workforce development, and that, if it intends to pay apprentice rates, it must comply with the Department of Labor and Workforce Development regulations at N.J.A.C. 12:60.

- Please refer to http://lwd.dol.state.nj.us/labor/wagehour/wagerate/wage_rates.html for official wage rate determinations for Mercer County, NJ.

10. NEW JERSEY EQUAL PAY ACT

On April 24, 2018, Governor Phil Murphy signed into law New Jersey's Diane B. Allen Equal Pay Act (P.L. 2018, c. 9) 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.

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 contactors 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.

The Department of Labor and Workforce Development has issued two forms, as required by the law, to be completed by employers. The forms should be used to report the employee's wage and demographic data and can be found on the LWD website (<http://www.nj.gov/labor/equalpayact>). **A completed copy of the forms is not required at time of bid; however, it will be required of the bidder who receives the notice to proceed from the College. Completed forms should be emailed to: equalpayact@dol.nj.gov**

11. In order for your proposal to be accepted and deemed valid, your company/firm will be required to comply with the requirements of N.J.S.A. 19:44A-1 et seq/P.L. 2005 Ch. 51 ("Chapter 51") and Executive Order 117. Enclosed are the requirements of Chapter 51 and Executive Order 117, the forms for Certification and Disclosure. The contract that will be generated based on this bid proposal cannot be awarded without approval of the Certification and Disclosure forms by the State of New Jersey, Department of Treasury. **A completed copy of your Certification form is not required at time of bid; however, it**

will be required from the bidder who receives the notice of intent to award from the College prior to the execution of the contract.

12. 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.

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).

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.

During the course of contract performance:

- (1) 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.
- (2) 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.
- (3) 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>.

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.

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.

13. 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.

14. 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.

15. 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 fax to **609-637-5140** or email to **horodesk@tcnj.edu** and must be received **prior to 4 p.m., on March 19, 2020**.
- B. Should any questions be received, a notice will be placed in the newspaper and the addendum or clarification will be available on **March 26, 2020 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.**

16. 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., April 3, 2020**, to The College of New Jersey, Attention: Roselle Horodeski 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.
17. 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

18. 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.
19. Bids shall include all costs of any nature necessary to complete the project in the manner and within the time required by the contract.
20. The College reserves the right to require bidders to provide a schedule of values of their lump sum bid price upon request.
21. 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.
22. Before submitting his bid, the bidder shall be familiar with the Drawings, Specifications, and other Documents that will form part of the contract and shall have visited the site of the project to confirm for themselves the character and amount of work involved.
23. 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.
24. It is understood and agreed that all prices quoted are firm and not subject to any increase during the life of the contract.
25. 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.
26. 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.

27. ACCEPTANCE/REJECTION OF BIDS

- A. THE COLLEGE OF NEW JERSEY, 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. The bid is irrevocable by the bidder or the bidder's representatives. The bid, and 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.

28. 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 and will be held liable for the difference between their low bid and the next highest/responsive bidder.

29. 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.

30. APPLICABLE LAWS:

- A. 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) New Jersey Statutes and Regulations

N.J.S.A. 10:5-31 *et seq.* and N.J.A.C. 17:27-1 *et seq.*, Affirmative Action

Prevailing Wage Act, N.J.S.A. 34:11-56.25 *et seq.*

N.J.S.A. 52:32-44, Business Registration Certificate

N.J.S.A. 34:11-56.48 *et seq.*, Public Works Contractor Registration Act

(2) Federal Statutes

Immigration Control and Reform Act (1986) – 8 U.S.C.A. Section 1324(a) *et seq.*

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

The Americans with Disabilities Act of 1990

31. EXAMINATION OF SITE, DRAWINGS AND SPECIFICATIONS

- A.** Each Bidder shall visit 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 has examined 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.

32. 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.

33. 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.

34. 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.

35. 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 shall have complete discretion to decide whether it will accept any substitution. 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.

36. DOCUMENTS/SUBMISSIONS THAT MUST BE PROVIDED BEFORE CONTRACT AWARD:

- **AFFIRMATIVE ACTION:** The bidder is required to complete and submit a copy of Initial Project Workforce Report (AA-201) to the College and the Division of Public Contracts Equal Employment Opportunity Compliance verifying that the bidder is operating under a federally approved or sanctioned Affirmative Action program. 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 Division.
- **CERTIFICATE OF INSURANCE:** The bidder is required to submit proof of liability insurance in accordance with The College's contract.
- **PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATES**
- **P.L. 2005, Chapter 51 / Executive Order 117 - Contractor Certification and Disclosure of Political Contributions:**

In order for your proposal to be accepted and deemed valid, your company/firm will be required to comply with the requirements of Chapter 51 and Executive Order 117. Enclosed are the requirements of Ch. 51 and EO 117, the forms for Certification and Disclosure. The contract that will be generated based on this bid cannot be awarded without approval of the Certification and Disclosure forms by the State of New Jersey, Department of Treasury.

- New Jersey Business Registration Certificate
- All applicable licenses, certificates, and requirements specified in the scope of work, contract documents and specifications.

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.

- a. _____ Bidder has completed the Bidder Information section and General Agreement section and filled out the receipt of addendum and clarifications.
- b. _____ Bidder has completed the form of proposal and indicated base bid for either Separate Bid or Single Bid (Lump Sum all trades), prices for Alternate Proposals, and Unit Prices.
- c. _____ Bidder for Single Bid (Lump Sum) has listed and has disclosed the subcontractors on the Subcontractor Information form.
- d. _____ Bidder has enclosed a certified check or bid bond for ten percent (10%) of the amount of the bid.
- e. _____ Bidder has completed and enclosed the Non-Collusion Affidavit.
- f. _____ Bidder and each disclosed subcontractor has enclosed a copy of its **registration certificate** in accordance with the requirement of the Public Works Contractor Registration Act. (NJ Dept. of Labor and Workforce Development). **A completed copy of your Certification form is not required at time of bid; however, will be required from the bidder who receives the intent to award from the College.**
- g. _____ Bidder has acknowledged the **Affirmative Action Language** in accordance with the requirements P.L. 1975 C.127. (NJAC 17:27).
- h. _____ Bidder has enclosed its MWBE information.
- i. _____ Bidder has enclosed its Electrical, HVACR and Plumbing License and any other licenses, certifications, certifications, and qualifications.
- j. _____ Bidder has enclosed its Vendor Qualification Statement
- ~~k. _____ Bidder has included a copy of its latest Experience Modification Rating (EMR Safety Rating). The College requires an average rating over the last 5 years of 1.25 or less.~~
- ~~l. _____ Bidder has included a copy of its DPMC Notice of Classification and Total Amount of Uncompleted Contracts.~~
- m. _____ Bidder has enclosed a copy of its Chapter 51 & EO117 Certification form. **A completed copy of your Certification form is not required at time of bid; however, will be required from the bidder who receives the intent to award from the College.**
- n. _____ Bidder has enclosed a copy of its New Jersey Business Registration Certificate in accordance with the requirements of the New Jersey Division of Revenue. **A completed copy of your Certificate is not required at time of bid; however, will be required from the bidder who receives the intent to award from the College.**

- o. _____ Statement of Ownership Disclosure(N.J.S.A. 52:25-24.2).**
- p. _____ Disclosure of Investment Activities in Iran (N.J.S.A. 52:32-58).**

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:

Addendum Number _____ Date _____ Addendum Number _____ Date _____
Addendum Number _____ Date _____ 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 (http://lwd.dol.state.nj.us/labor/wagehour/wagerate/wage_rates.html).

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. Upon conclusion of the 5 business day protest period, Bidder will execute the formal contract 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.

6. 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)

**PRICES FOR SINGLE BID (LUMP SUM): Base Bid, Alternate Proposals, and Unit Prices
FORM OF PROPOSAL**

To: **The College of New Jersey**

for: Centennial Hall Partial Room Air Conditioning

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:

_____ Dollars \$ _____
(words)

General Construction (Single overall Prime Contract)

2. Alternate No. 1 – Add:

AC for an additional eight (8) rooms on the women’s side. (See Drawings for complete description).

_____ Dollars \$ _____
(words)

Alternate No 2. - Add:

AC for an additional eight (8) rooms on the men’s side. (See Drawings for complete description).

_____ Dollars \$ _____
(words)

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. **UNIT PRICES:** We, the Undersigned, agree, if awarded the Contract to perform additional work or delete work at the Unit Prices set forth below or at a negotiated unit price (Unit Prices are for work that is in addition to or is deleted from the base bid work):

No Unit Prices are requested for this bid.

- C. **AGREEMENT:** We, the Undersigned, agree, if awarded the Contract, to execute an agreement for the above stated work and compensation on the Standard Form of Agreement Between Owner and Contractor.
- D. **SURETY:** We, the Undersigned, agree, if awarded the Contract, to execute and deliver to the Owner, prior to the signing of the Contract, the Performance and Payment Bonds as required.
- Contractor shall provide a Maintenance Bond at job completion for a period of one year for 100% of the final contract price.
- E. **BID SECURITY:** 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.

Certified Check	\$ _____
Bid Bond	\$ _____

F. **STATEMENT:**

1. 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, which offer shall be irrevocable for sixty (60) calendar days from the date of opening hereof and that the Owner may accept this offer at any time during said period by notifying the Undersigned of the acceptance of said offer.
2. We, the Undersigned, acknowledge receipt of the following Addenda/Clarifications:

Addenda Number	Dated
_____	_____
_____	_____
_____	_____

The undersigned further agrees to comply with the requirements as to conditions of employment, wage rates, and hours of labor set forth in the Contract Documents.

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 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 at a minimum the name and, where applicable, license number (or in lieu thereof enclose a copy of the license with this form) and preferably you will also list the subcontractor's address, telephone number, and fax number. If the work will be self-performed by the bidder, you may indicate that by inserting the name of the bidder (next to "Name"). If work by that Trade is not required per the scope of work of the project, you may indicate that by inserting "Not required" (next to "Name"). If the name of a subcontractor is not provided on this form for any one or more of the Trades, the bidder, in submitting its bid, certifies that, for such Trades, either the work will be self-performed by the bidder, or the work is not required per the scope of work.

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

Plumbing and Gas Fitting Work

List information for Subcontractor, if any:

Name: _____
License Number: _____
Address: _____

Telephone: _____
Fax: _____

Refrigeration, Heating and Ventilating Systems and Equipment

List information for Subcontractor, if any:

Name: _____
License Number: _____
Address: _____

Telephone: _____
Fax: _____

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

Security Systems

List information for Subcontractor, if any:

Name: _____
License Number: _____
Address: _____

Telephone: _____
Fax: _____

Structural Steel Work and Ornamental Iron Work

List information for Subcontractor, if any:

Name: _____
License Number: _____
Address: _____

Telephone: _____
Fax: _____

Asbestos Abatement Work

List information for Subcontractor, if any:

Name: _____
License Number: _____
Address: _____

Telephone: _____
Fax: _____

Bidder Name

By: _____
Signature

Printed Name of Signing Individual

Date

SMALL BUSINESS, MINORITY AND/OR FEMALE-OWNED BUSINESS REPORTING

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 as a:
_____ small business _____ minority-owned business _____ female-owned business
 - B. My company is certified by the NJ Department of Transportation as a:
_____ small business _____ minority-owned business _____ female-owned business
 - C. My company is a _____ small business _____ minority-owned or _____ female-owned but is not certified by either NJ Department.
 - C. _____ My company is not a small business, minority-owned or female-owned.

Signed

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

NOTE: General Power of Attorney and the current

this _____ day of _____, 20_____

financial statement of the bonding company
must be attached to each copy (a total of three)
of the Performance Bond.

BY: _____

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 EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127)
N.J.A.C. 17:27

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, up- grading, 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 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;

(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.

(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 Division 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 **Subchapter 10 of the Administrative Code (NJAC 17:27)**.

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

Firm Name: _____

Signature: _____

Title: _____

Date: _____

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 replace the mandatory contract language and good faith efforts requirements for construction contracts 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 **[Reporting Agency]** that its contracts should create a workforce that reflects the diversity of the State of New Jersey. Therefore, contractors engaged by the **[Reporting Agency]** 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 **[Reporting Agency]**'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 **[Reporting Agency]**'s contract with the contractor. Payment may be withheld from a contractor's contract 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 **[Reporting Agency]** 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 **[Reporting Agency]** 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.

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.



STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

Part I Check the box that represents the type of business organization:

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II

The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. **(COMPLETE THE LIST BELOW IN THIS SECTION)**

OR

No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART IV)**

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

--	--

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed.**

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above.** The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the **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 completion of any contracts with **The College of New Jersey** to notify the **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, permitting the **The College of New Jersey** to declare any contract(s) resulting from this certification void and unenforceable.

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



NON-COLLUSION STATEMENT

Date: _____

The College of New Jersey
The Office of Budget and Finance, Department of Purchasing
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

INFORMATION AND INSTRUCTIONS

For Completing the “Two-Year Vendor Certification and Disclosure of Political Contributions” Chapter 51 Form

Background Information

On September 22, 2004, then-Governor James E. McGreevey issued E.O. 134, the purpose of which was to insulate the negotiation and award of State contracts from political contributions that posed a risk of improper influence, purchase of access or the appearance thereof. To this end, E.O. 134 prohibited State departments, agencies and authorities from entering into contracts exceeding \$17,500 with individuals or entities that made certain political contributions. E.O. 134 was superseded by Public Law 2005, c. 51, signed into law on March 22, 2005 (“Chapter 51”).

On September 24, 2008, Governor Jon S. Corzine issued E.O. 117 which is designed to enhance New Jersey’s efforts to protect the integrity of procurement decisions and increase the public’s confidence in government. The Executive Order builds upon the provisions of Chapter 51.

Two-Year Certification Process

Upon approval by the State Chapter 51 Review Unit, the Certification and Disclosure of Political Contributions form is valid for a two (2) year period. Thus, if a vendor receives approval on January 1, 2014, the certification expiration date would be December 31, 2015. Any change in the vendor’s ownership status and/or political contributions during the two-year period will require the submission of new Chapter 51/Executive Order 117 forms to the State Review Unit. **Please note that it is the vendor’s responsibility to file new forms with the State should these changes occur.**

State Agency Instructions: Prior to the awarding of a contract, the State Agency should first use NJSTART (<https://www.njstart.gov/bsol/>) to check the status of a vendor’s Chapter 51 certification before contacting the Review Unit’s mailbox at CD134@treas.nj.gov. If the State Agency does not find any Chapter 51 Certification information in NJSTART and/or the vendor is not registered in NJSTART, then the State Agency should send an e-mail to CD134@treas.nj.gov to verify the certification status of the vendor. If the response is that the vendor is NOT within an approved two-year period, then forms must be obtained from the vendor and forwarded for review. If the response is that the vendor is within an approved two-year period, then the response so stating should be placed with the bid/contract documentation for the subject project.

Instructions for Completing the Form

Part 1: BUSINESS ENTITY INFORMATION

Business Name – Enter the full legal name of the vendor, including trade name if applicable.

Address, City, State, Zip and Phone Number -- Enter the vendor's street address, city, state, zip code and telephone number.

Vendor Email – Enter the vendor’s primary email address.

Vendor FEIN – Please enter the vendor’s Federal Employment Identification Number.

Business Type - Check the appropriate box that represents the vendor's type of business formation.

Listing of officers, shareholders, partners or members - Based on the box checked for the business type, provide the corresponding information. (A complete list must be provided.)

Part 2: DISCLOSURE OF CONTRIBUTIONS

Read the three types of political contributions that require disclosure and, if applicable, provide the recipient's information. The definition of "Business Entity/Vendor" and "Contribution" can be found on pages 3 and 4 of this form.

Name of Recipient - Enter the full legal name of the recipient.

Address of Recipient - Enter the recipient's street address.

Date of Contribution - Indicate the date the contribution was given.

Amount of Contribution - Enter the dollar amount of the contribution.

Type of Contribution - Select the type of contribution from the examples given.

Contributor's Name - Enter the full name of the contributor.

Relationship of the Contributor to the Vendor - Indicate the relationship of the contributor to the vendor. (e.g. officer or shareholder of the company, partner, member, parent company of the vendor, subsidiary of the vendor, etc.)

NOTE: If form is being completed electronically, click "Add a Contribution" to enter additional contributions. Otherwise, please attach additional pages as necessary.

Check the box under the recipient information if no reportable contributions have been solicited or made by the business entity. **This box must be checked if there are no contributions to report.**

Part 3: CERTIFICATION

Check Box A if the representative completing the Certification and Disclosure form is doing so on behalf of the business entity and all individuals and/or entities whose contributions are attributable to the business entity.

(No additional Certification and Disclosure forms are required if BOX A is checked.)

Check Box B if the representative completing the Certification and Disclosure form is doing so on behalf of the business entity and all individuals and/or entities whose contributions are attributable to the business entity with the exception of those individuals and/or entities that submit their own separate form. For example, the representative is not signing on behalf of the vice president of a corporation, but all others. The vice president completes a separate Certification and Disclosure form. **(Additional Certification and Disclosure forms are required from those individuals and/or entities that the representative is not signing on behalf of and are included with the business entity's submittal.)**

Check Box C if the representative completing the Certification and Disclosure form is doing so on behalf of the business entity only. **(Additional Certification and Disclosure forms are required from all individuals and/or entities whose contributions are attributable to the business entity and must be included with the business entity submittal.)**

Check Box D when a sole proprietor is completing the Certification and Disclosure form or when an individual or entity whose contributions are attributable to the business entity is completing a separate Certification and Disclosure form.

Read the five statements of certification prior to signing.

The representative authorized to complete the Certification and Disclosure form must sign and print her/his name, title or position and enter the date.

State Agency Procedure for Submitting Form(s)

The State Agency should submit the completed and signed Two-Year Vendor Certification and Disclosure forms either electronically to: cd134@treas.nj.gov or regular mail at: Chapter 51 Review Unit, P.O. Box 230, 33 West State Street, Trenton, NJ 08625-0230. Original forms should remain with the State Agency and copies should be sent to the Chapter 51 Review Unit.

Business Entity Procedure for Submitting Form(s)

The business entity should return this form to the contracting State Agency.

The business entity can submit the Certification and Disclosure form directly to the Chapter 51 Review Unit only when:

- The business entity is approaching its two-year certification expiration date and is seeking certification renewal;
- The business entity had a change in its ownership structure; OR
- The business entity made any contributions during the period in which its last two-year certification was in effect, or during the term of a contract with a State Agency.

Questions & Information

Questions regarding Public Law 2005, Chapter 51 (N.J.S.A. 19:44A-20.13) or E.O. 117 (2008) may be submitted electronically through the Division of Purchase and Property website at: <https://www.state.nj.us/treas/purchase/eo134questions.shtml>.

Reference materials and forms are posted on the Political Contributions Compliance website at: <http://www.state.nj.us/treasury/purchase/execorder134.shtml>.



Division of Purchase and Property

Two-Year Chapter 51/Executive Order 117 Vendor Certification and
Disclosure of Political Contributions

FOR STATE USE ONLY

Solicitation, RFP, or Contract No. _____ Award Amount _____

Description of Services _____

State Agency Name _____ Contact Person _____

Phone Number _____ Contact Email _____

Check if the Contract / Agreement is Being Funded Using FHWA Funds

**Please check if requesting
recertification**

Part 1: Business Entity Information

Full Legal Business Name _____
(Including trade name if applicable)

Address _____

City _____ State _____ Zip _____ Phone _____

Vendor Email _____ Vendor FEIN (SS# if sole proprietor/natural person) _____

**Check off the business type and list below the required information for the type of business selected.
MUST BE COMPLETED IN FULL**

- Corporation: LIST ALL OFFICERS and any 10% and greater shareholder (If the corporation only has one officer, please write "sole officer" after the officer's name.)
- Professional Corporation: LIST ALL OFFICERS and ALL SHAREHOLDERS
- Partnership: LIST ALL PARTNERS with any equity interest
- Limited Liability Company: LIST ALL MEMBERS with any equity interest
- Sole Proprietor

Note: "Officers" means President, Vice President with senior management responsibility, Secretary, Treasurer, Chief Executive Officer or Chief Financial Officer of a corporation, or any person routinely performing such functions for a corporation.

Also Note: "N/A will not be accepted as a valid response. Where applicable, indicate "None."

All Officers of a Corporation or PC

**10% and greater shareholders of a corporation
or all shareholders of a PC**

All Equity partners of a Partnership

All Equity members of a LLC

If you need additional space for listing of Officers, Shareholders, Partners or Members, please attach separate page.

Part 2: Disclosure of Contributions by the business entity or any person or entity whose contributions are attributable to the business entity.

1. **Report below all contributions solicited or made during the 4 years immediately preceding the commencement of negotiations or submission of a proposal to any:**

Political organization organized under Section 527 of the Internal Revenue Code and which also meets the definition of a continuing political committee as defined in N.J.S.A. 19:44A-3(n)

2. **Report below all contributions solicited or made during the 5 ½ years immediately preceding the commencement of negotiations or submission of a proposal to any:**

Candidate Committee for or Election Fund of any Gubernatorial or Lieutenant Gubernatorial candidate
State Political Party Committee
County Political Party Committee

3. **Report below all contributions solicited or made during the 18 months immediately preceding the commencement of negotiations or submission of a proposal to any:**

Municipal Political Party Committee
Legislative Leadership Committee

Full Legal Name of Recipient _____
Address of Recipient _____
Date of Contribution _____ Amount of Contribution _____
Type of Contribution (i.e. currency, check, loan, in-kind) _____
Contributor Name _____
Relationship of Contributor to the Vendor _____
If this form is not being completed electronically, please attach additional contributions on separate page. Click the "Add a Contribution" tab to enter additional contributions.

Remove Contribution

Add a Contribution

Check this box only if no political contributions have been solicited or made by the business entity or any person or entity whose contributions are attributable to the business entity.

Part 3: Certification (Check one box only)

- (A) I am certifying on behalf of the business entity and all individuals and/or entities whose contributions are attributable to the business entity as listed on Page 1 under **Part 1: Vendor Information**.
- (B) I am certifying on behalf of the business entity and all individuals and/or entities whose contributions are attributable to the business entity as listed on Page 1 under **Part 1: Vendor Information**, except for the individuals and/or entities who are submitting separate Certification and Disclosure forms which are included with this submittal.
- (C) I am certifying on behalf of the business entity only; any remaining persons or entities whose contributions are attributable to the business entity (as listed on Page 1) have completed separate Certification and Disclosure forms which are included with this submittal.
- (D) I am certifying as an individual or entity whose contributions are attributable to the business entity.

I hereby certify as follows:

- I have read the Information and Instructions accompanying this form prior to completing the certification on behalf of the business entity.**
- All reportable contributions made by or attributable to the business entity have been listed above.**

3. The business entity has not knowingly solicited or made any contribution of money, pledge of contribution, including in-kind contributions, that would bar the award of a contract to the business entity unless otherwise disclosed above:

- a) Within the 18 months immediately preceding the commencement of negotiations or submission of a proposal for the contract or agreement to:
 - (i) A candidate committee or election fund of any candidate for the public office of Governor or Lieutenant Governor or to a campaign committee or election fund of holder of public office of Governor or Lieutenant Governor; OR
 - (ii) Any State, County or Municipal political party committee; OR
 - (iii) Any Legislative Leadership committee.
- b) During the term of office of the current Governor or Lieutenant Governor to:
 - (i) A candidate committee or election fund of a holder of the public office of Governor or Lieutenant Governor; OR
 - (ii) Any State or County political party committee of the political party that nominated the sitting Governor or Lieutenant Governor in the last gubernatorial election.
- c) Within the 18 months immediately preceding the last day of the sitting Governor or Lieutenant Governor's first term of office to:
 - (i) A candidate committee or election fund of the incumbent Governor or Lieutenant Governor; OR
 - (ii) Any State or County political party committee of the political party that nominated the sitting Governor or Lieutenant Governor in the last gubernatorial election.

4. During the term of the contract/agreement the business entity has a continuing responsibility to report, by submitting a new Certification and Disclosure form, any contribution it solicits or makes to:

- (a) Any candidate committee or election fund of any candidate or holder of the public office of Governor or Lieutenant Governor; OR
- (b) Any State, County or Municipal political party committee; OR
- (c) Any Legislative Leadership committee.

The business entity further acknowledges that contributions solicited or made during the term of the contract/agreement may be determined to be a material breach of the contract/agreement.

5. During the two-year certification period the business entity will report any changes in its ownership structure (including the appointment of an officer within a corporation) by submitting a new Certification and Disclosure form indicating the new owner(s) and reporting said owner(s) contributions.

I certify that the foregoing statements in Parts 1, 2 and 3 are true. I am aware that if any of the statements are willfully false, I may be subject to punishment.

Signed Name _____ Print Name _____

Title/Position _____ Date _____

Procedure for Submitting Form(s)

The contracting State Agency should submit this form to the Chapter 51 Review Unit when it has been required as part of a contracting process. The contracting State Agency should submit a copy of the completed and signed form(s), to the Chapter 51 Unit and retain the original for their records.

The business entity should return this form to the contracting State Agency. The business entity can submit this form directly to the Chapter 51 Review Unit only when it -

- Is approaching its two-year certification expiration date and wishes to renew certification;
- Had a change in its ownership structure; OR
- Made any contributions during the period in which its last two-year certification was in effect, or during the term of a contract with a State Agency.

Forms should be submitted either electronically to: cd134@treas.nj.gov , or regular mail at: Chapter 51 Review Unit, P.O. Box 230, 33 West State Street, Trenton, NJ 08625.

State of New Jersey

DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

Solicitation Number: Bidder/Offeror:

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that the person or entity, or one of the person or entity's parents, subsidiaries, or affiliates, is not identified on a list created and maintained by the Department of the Treasury as a person or entity engaging in investment activities in Iran.

I certify, pursuant to Public Law 2012, c. 25, that the person or entity listed above for which I am authorized to bid/renew:

- is not providing goods or services of \$20,000,000 or more in the energy sector of Iran, including a person or entity that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran, AND
is not a financial institution that extends \$20,000,000 or more in credit to another person or entity, for 45 days or more, if that person or entity will use the credit to provide goods or services in the energy sector in Iran.

In the event that a person or entity is unable to make the above certification because it or one of its parents, subsidiaries, or affiliates has engaged in the above-referenced activities, a detailed, accurate and precise description of the activities must be provided in part 2 below to the Division of Purchase and Property under penalty of perjury. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, PLEASE ADD AN ADDITIONAL SHEET.

Name Relationship to Bidder/Offeror
Description of Activities
Duration of Engagement Anticipated Cessation Date
Bidder/Offeror Contact Name Contact Phone Number

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the State of New Jersey is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the answers of information contained herein. I acknowledge 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 recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the State of New Jersey and that the State at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): Signature:

Title: Date:



VENDOR QUALIFICATION SHEETS

Vendors are requested 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.

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.

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 that will be responsible for managing contract/service:

Name: _____

Telephone: _____ Fax: _____

Email Address: _____

Street Address: _____

City/State/Zip: _____

Federal Identification Number: _____

4. Address where all purchase orders and payment are to be mailed by users of any contract(s) resulting from this proposal (if different from above).

Purchase Orders:

Firm Name: _____

Street Address: _____

City/State/Zip: _____

Remittances:

Firm Name: _____

Street Address: _____

City/State/Zip: _____

VENDOR QUALIFICATIONS- continued

5. Name of insurance company:

Street Address: _____

City/State/Zip: _____

Types of Insurance: _____

6. Name of individual to contact for sales/services information:

Name: _____

Telephone: _____

Email Address: _____

Street Address: _____

City/State/Zip: _____

7. List the names and titles of personnel who will service this contract:

8. Is your firm registered with the Secretary of State of New Jersey? **Yes** ____ **No** ____

9. Is your firm incorporated? **Yes** ____ **No** ____

A) In What State? _____

10. Is your firm considered a small business in the State of New Jersey? **If yes, please attach a certificate or certification statement from the New Jersey Commerce and Economic Growth Commission.** If no and you would like to register, please contact the New Jersey Commerce and Economic Growth Commission at 609-777-0885.

Small Business: **Yes** ____ **No** ____

A) What category does your firm fall under?

Gross Revenues do not exceed \$500,000 _____

Gross Revenues do not exceed \$5 million _____

Gross Revenues do not exceed \$12 million _____

Under Executive Order 34, TCNJ is responsible for soliciting demographic information from its vendors. 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? (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

TCNJ is required to solicit the foregoing information. 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.

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 New Jersey owned minority and women business enterprises (MWBE) are afforded an equal opportunity to participate in New Jersey's purchasing and procurement processes.

State entities are required to report to the Division the ethnic and gender composition of the vendors with which we do business.

VENDOR QUALIFICATIONS-

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:

Fax Number:

Email Address:

B. Client Name:

Contact Name:

Telephone Number:

Fax Number:

Email Address:

C. Client Name:

Contact Name:

Telephone Number:

Fax Number:

Email Address:

D. Client Name:

Contact Name:

Telephone Number:

Fax Number:

Email Address:

VENDOR QUALIFICATIONS- continued

12. Please answer the following questions related to your prior experience:

- a. Has the bidder 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? If yes, attach summary of details on a separate sheet.

Yes _____ No _____

- b. Has the bidder 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? If yes, attach summary of details on a separate sheet.

Yes _____ No _____

- c. Has the bidder defaulted on a contract, thereby requiring the local unit to look to the bidder's surety for completion of the contract or tender of the costs of completion? If yes, attach summary of details on a separate sheet.

Yes _____ No _____

- d. Has the bidder 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. If yes, attach summary of details on a separate sheet.

Yes _____ No _____

Firm Name: _____

Signature: _____

Title: _____

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: [Centennial Hall Partial Room Air Conditioning] (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.

44 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.

45 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.

46 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% 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

51 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.

52 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:

[_____]

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

[_____]

54 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

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

82 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:

Thomas Mahoney, Esq.
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 Construction

By _____
Lloyd Ricketts,
Vice President and Treasurer

Date _____

Date _____

By _____
Michael Dixon,
Vice President for Facilities Management

By _____
Anup Kapur,
Executive Director of Procurement

Date _____

Date _____

CONTRACTOR:

By _____

Title _____

Date _____



GENERAL CONDITIONS
OF THE
CONTRACT FOR CONSTRUCTION

Last Revised January 2019

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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 visited the site and familiarized itself with 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 and have replaced any staff member of the Contractor or any of the Subcontractors for any non-discriminatory reason.

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 construct and 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.

The College shall have complete discretion to decide whether it will accept any substitution. 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.

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 only to the extent required by N.J.S.A. 2A:58B-3 (delayed performance caused by the College's own negligence, bad faith, active interference or other tortious conduct, but not for reasons contemplated by the parties and not for the negligence of others including

others under contract with the College on the theory that such negligence should be imputed to the College). The College 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.

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 Compensation For Certain Extensions And Limitations.

Under the Contract for Construction and these General Conditions, the College does not assume responsibility for many types of delays, including additional costs resulting from extensions granted because of those delays. Where the College is responsible for a delay under the express terms of the Contract for Construction and these General Conditions, it will pay extra compensation for any extension granted because of the delay.

Compensation by the College for delays (and extensions) for which it is responsible under the Contract for Construction and these General Conditions shall only include additional costs actually incurred at the site, and shall not include home office expense, home office overhead, lost profit or consequential losses. Any additional compensation under this Article shall 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.

No compensation will be paid if an extension for a delay for which the College is responsible is concurrent with another delay for which the Contractor is not entitled to an extension, or is concurrent with another delay for which the Contractor is entitled to an extension but the College is not responsible for the other delay.

If the College requests a change in the Contract Work, potential delays and extensions that result from the change and any resulting extra compensation for the change shall be addressed under the change order provisions in the Contract for Construction and these General Conditions in addition to this Article.

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) reasonable evidence that the Work will not be completed within the Contract Times, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- (g) failure to comply with requirements for monthly progress payments pursuant to Article 10.4; or
- (h) 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. Pursuant to N.J.A.C. 17:44-2.2, 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 shall preclude the Contractor from claiming or being paid or retaining any payments or being paid on any claims that are based on costs or that should be, 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 punchlist. 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 (and for a two year period that all HVAC work) 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 (or two year warranty for HVAC work) 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 1088 or later occurrence form of insurance including contractual liability with limits of at least _____ dollars (\$ _____) combined single limit for bodily injury and property damage liability for each occurrence. The CGL policy shall also include products/completed operations with limits of at least (\$ _____) per occurrence. This insurance shall be maintained for at least 1 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 _____ dollars (\$ _____) 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 Protection 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 employer, 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 Recovery Of Monies By The College From Other Contracts With The Contractor.

When the Contract Documents authorize the College to withhold or deduct money from any monies due to the Contractor, or require the Contractor to pay or return monies for any reason, the College may in its discretion withhold any monies due the Contractor under any other contracts between the Contractor and the College. This right shall not affect the rights of the College against the Contractor or its surety under the Contract, and the College shall not be obliged to exercise this right as to any other contract as a condition of exercising its rights against the Contractor or surety under the Contract.

18.8 Buy American Requirement.

The Contractor shall comply with N.J.S.A. 52:32-1 and N.J.S.A. 52:33-1 et seq., which prohibit the use by the Contractor or Subcontractors of materials or farm products produced and manufactured outside of the United States on any public Work. 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.

18.9 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.

18.10 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.

18.11 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.

18.12 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.

18.13 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.

18.14 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.

18.15 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.

18.16 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.

18.17 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.

18.18 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.

18.19 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.

18.20 Publicity.

Publicity and/or public announcements pertaining to the Project must be approved in writing by the College prior to release.

February 14, 2020

The College of New Jersey
Centennial Hall – Partial Air Conditioning
Entech Engineering, Inc.

1 **SECTION 00010**

2 **INDEX**

3

4 SECTION 00010

5 INDEX

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23 PROJECT RECORD DOCUMENTS

24 SECTION 01524

25 CONSTRUCTION WASTE MANAGEMENT

26

1 **SECTION 01010**

2 **SUMMARY OF WORK**

3
4 **PART 1- GENERAL**

5
6 **1.01 RELATED DOCUMENTS**

7
8 Drawings and general provisions of the specifications, including General and Supplementary Conditions and other
9 Division 1 Specification Sections, apply to this Section.

10
11 **1.02 WORK COVERED BY CONTRACT DOCUMENTS**

12
13 A. The Project consists of all work noted on the drawings and in these specifications

- 14
15 1. Project Location: The College of New Jersey, Ewing New Jersey
16 2. Owner: The College of New Jersey, State of New Jersey

17
18 **1.03 CONTRACTS**

- 19
20 A. The project contract is between The College of New Jersey and the single prime contractor performing the
21 work specified.
22
23 B. Definition of Extent of Contract Work: The contract documents, specifications, project drawings,
24 manufacturer's installation handbooks, TCNJ form of agreement, and the contractors response to the RFP
25 represent the extent of the construction contract.

26
27 **1.04 CONTRACTORS USE OF PREMISES**

- 28
29 A. General: During the construction period the Contractor shall have full use of the
30 premises for construction operations, including use of the site. The contractor's use of the premises is
31 limited only by the Owner's right to perform work, retain other contractors on portions of associated
32 projects, or to access the building for the occupants.
33
34 1. Contractor is to coordinate their work with the activities for each work location.
35
36 B. Use of the Site: Limit use of the premises to areas required for equipment and material storage and access to
37 the roof area. Confine operations to areas within contract limits indicated. Do not disturb portions of the
38 site beyond the areas immediately adjacent to the building where the work is being performed.
39
40 1. Owner Occupancy: Allow for Owner occupancy and use by the public.
41 2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the
42 Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking
43 or storage of materials unless previously approved by the owner. Schedule deliveries to minimize space
44 and time requirements or storage of materials and equipment on -site.
45 3. Burial of Waste Materials: Disposal of organic and hazardous materials on-site either by burial or
46 burning, will not be permitted.
47 4. Parking is allowed with in the construction fence only. If more parking is needed, there is additional
48 parking provided at the colleges Carlton Avenue parking lot. The contractor is responsible to shuttle
49 workers back and forth as needed.
50
51 C. Use of the Existing Building: Maintain any existing building in a weathertight condition throughout the
52 construction period. Repair damage caused by construction operations. Take all precautions necessary to
53 protect the building, its contents, components, and systems and its occupants during the construction period.

February 14, 2020

The College of New Jersey
Centennial Hall – Partial Air Conditioning
Entech Engineering, Inc.

- 1
- 2 **PART 2 - PRODUCTS**
- 3 (Not Applicable)
- 4
- 5 **PART 3- EXECUTION**
- 6 (Not Applicable)
- 7

- 8 END OF SECTION 01010

1 **SECTION 01025**

2 **MEASUREMENT AND PAYMENT**

3
4 **PART 1 - GENERAL**

5
6 1.01 SCHEDULE OF VALUES

7
8 A. Each Contractor shall prepare a schedule of values in coordination with the preparation
9 of progress schedule. Correlate line items with other administrative schedules and
10 forms required for the work, including progress schedule, payment request form, listing
11 of subcontractors, schedule of allowances if any, schedule of alternates if any, listing of
12 products and principal suppliers and fabricators, and schedule of submittals. Break
13 down principal subcontract amounts into multiple line items for each entity of work.
14 Round off to nearest whole dollar, but with total equal to Contract Sum. Submit 4
15 copies of schedule of values to the Owner and Architect for review and approval.

- 16
17 • **Upon Owner/Architect approval, Owner will return the Schedule of Values to**
18 **the Contractor for the Contractor to submit to the bonding company for their**
19 **acceptance. Payments will not be made to the Contractor until the bonding**
20 **company has provided a written acceptance to the Owner.**

21
22 B. The schedule of values shall be tabulated into subcontracts and trades with the Quantity,
23 Labor, Material, and Total Cost indicated. The Schedule of Values shall include such items
24 as bonds, insurance, allowances and alternates, punchlist/close out documents and shall
25 enclose copies of invoices and/or cancelled checks from bonding and insurance agents.

26
27 C. Schedule of values shall be submitted on AIA Form G703 or similar form approved by the Architect and
28 Owner.

29
30 D. Each Contractor's monthly application for payment shall be in the same schedule form, reflecting the same
31 items from above. Unit costs shall be realistic for their part of the Work.

32
33 1.02 CHANGES IN THE WORK

34
35 A. When a change in the Work includes a category or categories of Work both added to and deducted from
36 the Contract, the total quantities of added Work and of deleted Work shall be determined separately for
37 each category and the appropriate unit price or net cost of the Work shall be applied to the difference
38 between the two total quantities.

39
40 B. Unit prices shall be inclusive of all costs and shall be applied to units of measure as defined in the
41 Specifications for each category of Work.

42
43 C. For all extra Work performed by the Contractor, the gross cost to the Owner shall include the net cost of
44 the Work to the Contractor plus an allowance for overhead and profit not to exceed 15% of the net cost.

45
46 D. For all extra Work performed by a Subcontractor, the gross cost to the Owner shall include the net cost of
47 the Work to the Subcontractor plus an allowance for overhead and profit not to exceed 15% of the net cost,
48 plus the Prime Contractor's overhead and profit not to exceed 5% of the Subcontractor's cost.

49
50 E. Net cost of extra Work shall be the actual or pro-rated cost of:

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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.
 5. Insurance and Bonds.

F. Gross costs shall be net costs plus the mark up allowances described above, such mark up allowances being inclusive, of all cost of superintendence, supervision, engineering, overhead, profit, administrative and site office expenses and all other general expenses.

1.03 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).
- 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 issued prior to first day of the period of construction covered by application. Applications for payment shall include weekly payroll report. Contractor shall furnish to the Owner certified payroll reports for each payroll period with pay request, 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." A payment request will not be paid until the Owner receives the certified payrolls.
- D. Submit one "pencil" copy of each proposed payment application to the architect and owner, for review, not less than seven days prior to formal submissions of application.
- E. Submit 4 executed copies of each payment application. 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.

1.04 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 1. Listing of subcontractors and principal suppliers and fabricators.
- 2
- 3 2. Schedule of values.
- 4
- 5 3. Schedule of principal products.
- 6
- 7 4. Schedule of submittals (preliminary if not final).
- 8
- 9 5. Copies of acquired building permits and similar authorizations and licenses from governing authorities
- 10 for current performance of the work.
- 11
- 12 6. Data needed by Owner to secure related insurance coverages.
- 13
- 14 7. Performance and Payment Bond.
- 15
- 16 8. Insurance Certificates.
- 17

18 1.05 PROGRESS PAYMENTS

19
20 A. Based upon application for payments submitted to the Architect and the Owner, by the Contractor, on or
21 about the 25th day of each month for the period ending the last day of the previous second month, and
22 Certificate of Payment issued by the Architect and the Owner, the Owner will make progress payments on
23 account of the Contract Sum to the Contractor as follows:

- 24
- 25 1. On or after the 20th day of each month, the Contractor shall submit to the Architect and Owner a
26 "pencil copy" indicating the previous payment and the proposed amounts for each line item for the
27 current period. After review and approval or changes, the Contractor shall prepare the final billing for
28 presentation to the Architect and Owner.
- 29
- 30 2.a. Whenever any contract, the total price of which exceeds \$100,000, entered into by a State college, for
31 the construction, reconstruction, alteration or repair of any building, structure, facility or other
32 improvement to real property, requires the withholding of payment of a percentage of the amount of
33 the contract, the contractor may agree to the withholding of payments in the manner prescribed in the
34 contract, or may deposit with the State college registered book bonds, entry municipal bonds, State
35 bonds or other appropriate bonds of the State of New Jersey, or negotiable bearer bonds or notes of
36 any political subdivision of the State, the value of which is equal to the amount necessary to satisfy
37 the amount that otherwise would be withheld pursuant to the terms of the contract. The nature and
38 amount of the bonds or notes to be deposited shall be subject to approval by the State college. For
39 purposes of this section, "value" shall mean par value or current market value, whichever is lower.
- 40

41 If the contractor agrees to the withholding of payments, the amount withheld shall be deposited, with
42 a banking institution or savings and loan association insured by an agency of the Federal government,
43 in an account bearing interest at the rate currently paid by such institutions or associations on time or
44 savings deposits. The amount withheld, or the bonds or notes deposited, and any interest accruing on
45 such bonds or notes, shall be returned to the contractor upon fulfillment of the terms of the contract
46 relating to such withholding. Any interest accruing on cash payments withheld shall be credited to
47 the State college.

- 48
- 49 b. Any contract, the total price of which exceeds \$100,000, entered into by a State college involving the
50 construction, reconstruction, alteration, repair or maintenance of any building, structure, facility or
51 other improvement to real property, shall provide for partial payments to be made at least once each
52 month as the work progresses, unless the contractor shall agree to deposit bonds with the State college
53 pursuant to section 1.
- 54

- c. 1. With respect to any contract entered into by a State college pursuant to section 2 for which the contractor shall agree to the withholding of payments pursuant to section 1, 2% of the amount due on each partial payment shall be withheld by the State college pending completion of the contract.
- 2. Upon acceptance of the work performed pursuant to the contract for which the contractor has agreed to the withholding of payments pursuant to subsection a. of this section, 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.
- d. This act shall take effect immediately. This bill supplements the “State College Contracts Law,” P.L.1986, c.43 (C.18A:64-52 et seq.), and applies to any State college contract for over \$100,000 which involves the construction, reconstruction, alteration or repair of any building, structure, facility or other improvement to real property. Under the provisions of this bill, whenever a contract of this type requires the withholding of payment of a percentage of the amount of the contract, the contractor would have the choice of either agreeing to a retainage deduction from each monthly progress payment, or the contractor could choose to deposit bonds in the amount necessary to satisfy the amount that otherwise would be withheld under the contract. If a contractor chooses a retainage deduction from each monthly payment, then the retainage would be limited to 2% of the amount due on each partial payment. Upon acceptance of the work performed pursuant to the contract for which the contractor has agreed to a retainage deduction, all amounts being withheld by the State college must be paid in full to the contractor within 45 days of the final acceptance date agreed upon by the contractor and the State college. The bill provides that if the State college requires maintenance security after acceptance of the work performed under the contract, the security must be obtained in the form of a maintenance bond, which is required to be no longer than two years and no more than 100% of the project costs. The provisions of this bill are similar to provisions in the “Local Public Contracts Law,” P.L.1971, c.198 (C.40A:11-1 et seq.) and the “Public School Contracts Law,” P.L.1977, c.114 (C.18A:18A-1 47 et seq.).
- 3. Upon substantial completion, the retainage shall, upon the Architect/Owner’s approval, remain at 2% of the value of work completed. 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.
- 4. 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.
- 5. Owner shall make payments within 30 days of receipt of said monthly pay requisition.

1.06 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.

- 1 3. Test/adjust/balance records, maintenance instructions, meter readings, start up performance reports,
2 and similar change over information germane to Owner's occupancy, use, operation and maintenance
3 of completed work.
- 4
- 5 4. Final cleaning of the work.
- 6
- 7 5. Application for reduction (if any) of retainage, with consent of surety.
- 8
- 9 6. Advice to Owner on coordination of shifting insurance coverages, including proof of extended
10 coverage as required.
- 11
- 12 7. Listing of Contractor's incomplete work, recognized as exceptions to certificate of substantial comple-
13 tion.
- 14

15 1.07 FINAL PAYMENT APPLICATION

- 16
- 17 A. The administrative actions and submittals which shall precede or coincide with submittal of the
18 Contractor's final payment application can be summarized as follows, but not necessarily by way of
19 limitation.
 - 20
 - 21 1. Completion of project closeout requirements.
 - 22
 - 23 2. Completion of items specified for completion beyond time of substantial completion, regardless of
24 whether special payment application was previously made.
 - 25
 - 26 3. Assurance, satisfactory to Owner and Owner, that unsettled claims will be settled and that work not
27 actually completed and accepted will be completed without undue delay.
 - 28
 - 29 4. Transmittal of required project construction records to Owner via the Owner.
 - 30
 - 31 5. Proof, satisfactory to Owner and Owner, that taxes, fees and similar obligations of Contractor have
32 been paid.
 - 33
 - 34 6. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
 - 35
 - 36 7. Notarized consent of surety for final payment.
 - 37

38 1.08 WAIVER OF LIENS

- 39
- 40 A. Each Contractor, for himself, and for all Subcontractors and material men, agrees that no mechanic's lien
41 or other claim shall be filed or maintained by the Contractor or by any Subcontractor, materialmen, laborer
42 or any other person whatsoever for, or on account of any work performed or materials furnished under this
43 Contract. This agreement shall be an independent contract, and the Contractor shall execute and deliver a
44 separate Waiver of Liens in form and substance satisfactory to the Architect and Owner contemporaneously
45 with the execution of the Owner-Contractor Agreement and before any work is begun at the site.
- 46
- 47 B. In every subcontract entered into by each Contractor after execution of this Contract or in connection
48 herewith, the Contractor shall incorporate a provision, similar to the foregoing paragraph, to the effect that
49 neither the Subcontractor nor any party acting through or under him shall file or maintain any mechanic's
50 lien or other claim against the Architect or Owner in connection with the Work.
- 51

52 END OF SECTION 01025

1 **SECTION 01100**

2 **PROJECT PROCEDURES**

3
4 **PART 1 - GENERAL**

5
6 1.01 SPECIAL REQUIREMENTS

- 7
8 A. Schedule: Contractor shall provide a master schedule showing sequencing of work utilizing the CPM
9 method. The Contractor shall supply a schedule with all subcontractor activities, relationships, and
10 durations, utilizing the CPM method via SureTrak/Primavera, Version 3.0, or a Microsoft scheduling
11 software to the Owner on a working version CDrom and coordinate their schedule with the Owner.
- 12 • The Contractor is required to update at the end of each month the CPM Schedule based on the
13 percentage completed for each activity on the approved schedule (in concert with the submission of
14 the percentage completed in the monthly proposed schedule of values).
 - 15 • **The contractor in their bid includes a cost of \$500.00 per month for this schedule submission,
16 for the duration of construction (per the milestone schedule in the bidding documents). This only
17 applies to projects in excess of 2 million dollars in base price price. The contractors schedule of
18 values shall include this cost, and can only be billed for upon TCNJ's successful receipt of said
19 schedule. Should any schedule not be received at the end of any month during construction,
20 TCNJ will issue a deduct change order in the amount of \$500.00 to the contractor.**
- 21
22 B. Each Contractor shall take all necessary precautions to ensure the safety of all structural elements during all
23 phases of all work. No materials, cranes, trucks or any other construction loads shall be placed on any part
24 of the structure until the Contractor has determined the adequacy of that structure to carry the intended load
25 without damage or overstress.
- 26
27 C. Entrance into, or other use of the building will not be permitted except as may be necessary for the
28 execution of the Work, and shall be subject to the restrictions and instructions of the Owner.
- 29 **NOTE: any personnel working in any residence hall, including delivery personnel are to have a
30 State Police Background check completed before entering any residence hall. Contractor is
31 to provide the background check for all personnel at the kick off meeting, and/or prior to
32 start of their work. Should a person not have a background check but is on site for a short
33 period of time, said person shall be escorted by a TCNJ project manager/superintendent and
34 /or a designated person that has provided the appropriate back ground check information.
35 All back ground checks will be forwarded to TCNJ police for review and filing.**
- 36 **NOTE: any personnel working in a residence hall must where a badge with the name of the
37 vendor/contractor they work for and their personal name. This badge must be worn at all
38 times.**
- 39
40 D. Routes of ingress and egress to areas where work is being performed shall be subject to the restrictions and
41 instructions of the Owner.
- 42
43 E. Materials shall be moved through the Building using rubber tired vehicles which shall be properly con-
44 trolled at all times to avoid damage to existing wall, floor or ceiling surfaces.
- 45
46 F. Water damage cannot be tolerated and it is incumbent upon Contractors to take any steps necessary to keep
47 the existing premises dry at all times.
- 48
49 G. Any damage to the new building from heavy equipment, striking the Building or any other damage to any
50 part of the premises shall be repaired at the expense of the Contractors.
- 51
52 H. All welding and cutting shall be performed by qualified and certified welders. Certificates shall be on
53 file with the Contractor prior to commencement of any welding.
- 54

- 1 I. No work shall start before 8:30am.unless agreed to in advance with the College.
2
3

4 **PART 2 - PRODUCTS**
5 NOT APPLICABLE
6
7

8 **PART 3 - EXECUTION**
9

10 3.01 GENERAL
11

- 12 A. Contractors shall perform the work on or about the premises in a careful manner with full consideration to
13 fire protection as required by the National Fire Protection Association Standards, National Board of Fire
14 Underwriters and State and Local Departments having jurisdiction. Fire resistant materials shall be used
15 for temporary enclosures.
16
17 B. Chemical extinguishers approved by the Owner shall be provided by the General Contractor during the
18 progress of the work where and as required by the Owner, the Local Fire Marshal and the National Board
19 of Fire Underwriters.
20
21 C. The Contractor shall maintain an active program of fire prevention to keep workmen fire conscious during
22 the entire life of the Contract. Designate one member of the organization to execute and coordinate fire
23 control measures of his own organization and that of all subcontractors under his jurisdiction.
24
25 D. All sub-contractors shall cooperate with the Contractor in carrying out the above program.
26
27 E. Storage of flammable materials will not be permitted in the Building unless written permission is obtained
28 from the Owner. Storage of all such materials shall be the Contractors' responsibility.
29
30 F. On-site open burning of rubbish, garbage, trade waste, leaves or plant life is prohibited.
31
32 G. Safety Program: The Contractor shall institute a safety program in accordance with OSHA and any local,
33 state, or federal guidelines. The contractor shall name a safety officer to monitor this program and shall
34 submit a safety report at job meetings.
35
36 H. Stockpiling: Stockpiling of materials on site will be allowed (but limited due to the limited space on this
37 site). Such materials shall not impair or impede the functioning of the facility. Materials stored on site
38 shall be secured to prevent loss from theft, damage, vandalism or fire. By stockpiling materials on site,
39 the contractor assumes full responsibility for said materials, and shall protect them to the fullest extent
40 possible. Specific locations for stockpiling materials shall be coordinated with the Architect, and Owner.
41 I. Safety Barriers: The Contractor shall erect safety barriers to deter and prohibit unauthorized access to the
42 construction site; such barriers may take the form of fences and shall be clearly marked with signage
43 prohibiting unauthorized access. The Contractor shall be responsible for safety barriers within the building.
44 The contractor shall be liable for damages to persons or property due to the construction process if adequate
45 safety measures are not undertaken. The Owner and Architect shall review safety precautions for their
46 adequacy but shall not be held liable for Contractors failure to maintain or provide adequate protection.
47
48 J. Sequencing: The Contractor will work with the Sub-Contractors to sequence the work during the
49 submission of monthly project schedules. Contractors shall endeavor to coordinate their work efforts with
50 the Owner's requirements. Interruptions of utility services shall be coordinated with the Architect, and
51 Owner, but in no instance shall last longer than 2 hours.
52
53 K. Limited staging and on site parking will be provided by General Contractor. The Contractor will coordinate
54 parking areas with all the subcontractors and TCNJ.
55

1. Parking will be available at Carlton Avenue. Contractor will provide shuttle service to and from the site.

2. Contractor will be permitted to have vehicles on site with in the construction fencing only. Contractor is to provide stone in all parking areas on site to prevent the buildup of ruts and mud, thus minimizing the amount of mud leaving the site and being left behind on TCNJ roads.

L. Site Utilities: Electric power and water are available on site. Toilet facilities will be made available by the Contractor. These facilities shall remain clean by the Contractors throughout the course of the project. The Contractors shall repair and/or replace any damaged fixtures, partitions, etc. The Electrical Sub-Contractor shall tie in a temporary power panel (or panels as required) for all trades to use during construction. Interruption of building services shall not occur without prior consent and coordination by the Owner and Owner.

1. Provide portable toilets for all construction personnel.

M. Construction Lighting: The Electrical Sub-Contractor shall run sufficient strings and fixtures to maintain a 50 foot-candle/sq.ft.intensity of light throughout the project areas.

N. Dumpster Location and Cleanup: The Architect and Owner shall coordinate the dumpster location with the Contractors. The Contractor shall be responsible for obtaining, maintaining, and disposing of dumpsters, and shall maintain clean work areas throughout the course of the project.

- Contractor is to provide adequate manpower during the entire course of the project to maintain the site in a clean, neat and professional manner. At a minimum the contractor is to clean the entire site twice per week (on different days) by picking up all debris in and around the site. Sweeping the entire building daily is required once the floor slabs are in place. Contractor is to place garbage cans on each floor minimum 3 per floor in designated locations to assist in keeping the site clean. The owner will not tolerate a building project that is not maintained in a professional manner at all times.

3.02 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, the Owner, 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. For the Owner's convenience the Owner will chair the meetings.

3.03 MONTHLY REPORTS

- A. The Contractor is to provide TCNJ 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, piecemeal submissions will not be accepted):
- Project overview
 - Financial status
 - Updated project schedule
 - Change order request log
 - Submittal log
 - RFI log

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- 1 g. Owner/Architect issues that need immediate resolution
- 2 h. Order/delivery issues
- 3
- 4

5 **B. The Contractor is to provide TCNJ with this monthly report, and include in their bid a cost of \$500.00**
6 **per month for all projects in excess of 2 million dollars base bid price for the duration of the**
7 **construction period as noted in the bidding milestone schedule. This total cost will be listed in the**
8 **contractor’s schedule of values and can be billed for on a monthly basis only if said report is received**
9 **in whole as noted above. Should TCNJ not receive said complete report a deduct change order will be**
10 **issued to the contractor for \$500.00 for that month.**

11
12
13 END OF SECTION 01100

1 **SECTION 01300**

2 **SUBMITTALS AND SUBSTITUTIONS**

3
4 **PART 1 – GENERAL**

5
6 1.1 **PROGRESS SCHEDULE / COORDINATION DRAWINGS**

7
8 A. The Contractor's schedule, shall coordinate with all trades to produce a coordinated CPM via
9 Suretrak/Primavera version 3.0 or a Microsoft scheduling program schedule indicating the start and
10 completion dates for each portion of the work as defined by the schedule of values, with the total time as
11 defined by the contract time and milestone dates as set forth in these specifications. The Contractor's CPM
12 schedule shall be submitted in electronic format (Suretrak 3.0 or a Microsoft Scheduling program) to and
13 reviewed by the Owner and Architect prior to first application for payment. Any revisions or additional
14 information requested by the Owner or Architect shall be provided. (No payment shall be made to any
15 Contractor not providing a schedule that reflects their entire work).

- 16 • Also refer to Section 01100-1 – Project Procedures.

17
18 B. The Contractor shall revise the progress schedule on a monthly basis as the work progresses reflecting
19 therein any delays, including those not within the Contractor's control, or accelerations in the progress of
20 the work. The progress schedule, as revised for any weekly period, shall be discussed at the bi-weekly job
21 meetings with the, Owner, the Architect, and the Contractor and the major trades in order to insure that the
22 percentage of actual completion of any portion of the work as called for in the progress schedule for that
23 bi-weekly period is attained. Monthly updates to the progress schedule shall be made prior to application
24 for payment.

25
26 C. Should any delay occur in the progress of the work or any portion thereof, the Contractor shall be required
27 to implement all necessary measures to accelerate the construction, to meet the percentages of completion
28 dictated by the progress schedule on the applicable dates, without additional cost to the Owner.

29
30 1.2 **SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

31
32 A. Shop drawings, product data and samples will not be processed by the Owner and/or Architect until the list
33 of subcontractors, material suppliers and fabricators is submitted as required under Paragraph 3.12 of the
34 General Conditions.

- 35 • The successful Contractor shall submit their list of proposed substitutions with in 20 calendar
36 days of the Contract Award.
- 37 • The Architect shall be compensated on an hourly basis for review of all shop drawings or
38 samples that do not meet the requirements of the contract documents after two submissions.
39 The compensation shall be deducted from the contractors contract via a deduct change order,
40 or other means that both parties agree to.

41
42 B. Coordinate preparation and processing of submittals with performance of the work so that work will not be
43 delayed by submittals. Allow two weeks for review/approval by the Architect for the approval process, one
44 additional week for TCNJ staff to review the submittal before it is returned to the contractor. Allow additional
45 time if processing must be delayed to permit coordination with subsequent submittals with others.

- 46 a. **Contractor is to provide a submittal schedule identifying the critical path submittals to assist
47 the design team in prioritizing their review and subsequent return to the contractor prior to
48 the first requisition for payment being processed. Every submittal is to have a required return
49 date associated with it so the design team can schedule their reviews accordingly.**

50
51 C. Provide permanent marking on each submittal to identify Project, date, Contractor, subcontractor, submittal
52 name, Specification section, drawing reference, and similar information to distinguish it from other
53 submittals. Show Contractor's executed review and approval marking and provide space (5" x 7") for
54 Architect's Action marking and space for Owner's review marking. Package each submittal appropriately

1 for transmittal and handling. Submittals received, which are lacking the above information, will be
2 returned without action. Submittals, which are received from sources other than through Contractor's
3 office, will be returned without action.
4

5 D. Each submission shall be complete, with all options clearly marked and with all components required for
6 the assembly fully described and detailed. Submissions missing important information will be returned
7 unchecked.
8

9 E. Transmittal Form: Submittals shall be accompanied by a transmittal form. Provide Contractor's
10 certification on form, ready for execution, stating that information submitted complies with requirements
11 of contract documents.

- 12 • Transmit all submittals and shop drawings to the Architect or Engineer with a copy of the transmittal
13 to the Owner.
14

15 F. Except as otherwise indicated in individual work sections, comply with requirements specified herein for
16 each indicated category of submittal. Provide and process intermediate submittals, where required between
17 initial and final, similar to initial submittals.
18

19 G. Maintain returned final set of samples at project site, in suitable condition and available for quality control
20 comparisons by Architect, and by Owner.
21

22 H. Do not proceed with installation of materials, products or systems until final copy of applicable shop
23 drawings, product data and samples are in possession of Installer.
24

25 I. Provide newly prepared shop drawings, on reproducible sheets, with graphic information at accurate
26 scale, with company name of preparer indicated. Show dimensions and note which are based on field
27 measurement. Identify materials and products in the work shown. Indicate compliance with standards,
28 and special coordination requirements. Do not allow shop drawing copies without appropriate final
29 Action markings by Architect to be used in connection with the work.
30

- 31 1. Initial and Intermediate Submittals: One correctable translucent reproducible print and 5 blue line
32 or black line prints; reproducible will be returned.
- 33 2. Final Submittal: 6 prints, plus 3 additional prints where required for maintenance manuals; 4 will
34 be retained and remainder will be returned, one of which shall be marked up and maintained by
35 Contractor as "Record Document".
- 36 3. Electronic submittals are acceptable in AutoCad format only. Contractor shall be responsible for
37 printing and distribution of multiple copies as required.
38

39 J. Collect required product data into one submittal for each unit of work or system; and mark each copy to
40 show which choices and options are applicable to the project. Include manufacturer's standard printed
41 recommendations for application and use, compliance with standards, application of labels and seals,
42 notation of field measurements that have been checked, and special coordination requirements. Maintain
43 one set of product data for each submittal at project site, available for reference by Architect and others.
44

45 K. Submittals will be accepted from the Contractor only. Submittals received from other entities will be
46 returned without review or action.

- 47 1. Submittals received without a transmittal form will be returned without review or action.
- 48 2. Transmittal form: Use a form matching the sample form attached to this section. Include the
49 following:
 - 50 a. List of deviations.
 - 51 b. The Contractor's certification signature.
- 52 3. Fill out a separate transmittal form for each submittal; also include the following:
 - 53 a. Other relevant information.
 - 54 b. Request for additional information.
55

1 L. Do not submit product data, or allow its use on the project, until compliance with requirements of
2 Contract Documents has been confirmed by Contractor. Submittal is for information and record unless
3 otherwise indicated. Initial submittal is final submittal unless returned promptly by Architect marked
4 with an Action that indicates and observed noncompliance. Submit 6 copies, plus 3 additional copies,
5 which will be returned, where required for maintenance manuals.

6 1. Electronic submittals are acceptable in 8 1/2" x 11" format only.
7
8
9

10 M. Provide three (3) samples identical with final condition of proposed materials or products for the work.
11 Include range samples, not less than 3 units, where unavoidable variations between units of each set.
12 Provide full set of optional samples where Architect's selection is required. Prepare samples to match
13 Architect's sample where so indicated. Include information with sample to show generic description,
14 source or products name and manufacturer, limitations, and compliance with standards. Samples are
15 submitted for review and confirmation of color, pattern, texture and kind by Architect. Architect will not
16 test samples, except as otherwise indicated, for compliance with other requirements, which are therefore
17 the exclusive responsibility of the Contractor.
18

19 N. Upon receipt of a signed copy of the Architects' Waiver form, electronic copies of CAD drawings of the
20 Contract Documents will be provided by the Architect for Contractor's use in preparing submittals. Copy
21 of Waiver form is attached.
22

23 O. Product Selection Procedures: Procedures for product selection include the following:
24

25 1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product
26 and manufacturer, provide the named product or an equivalent.
27

28 2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or
29 "Source" name single manufacturers or sources, provide a product of the manufacturer or source
30 that complies with requirements, or an equivalent.
31

32 3. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of
33 names of both products and manufacturers, provide one of the products listed that complies with
34 requirements, or an equivalent. Comply with provisions of "Product Options and Substitutions,"
35 Section 1.4 of Division 1300 of these specifications when submitting an equivalent product.
36

37 4. Manufacturers: Where specification paragraphs or subparagraphs titled "Manufacturers" introduce
38 a list of manufacturers' names, provide a product by one of the manufacturers listed, or an equivalent,
39 that complies with requirements. Comply with provisions of "Product Options and Substitutions,"
40 Section 1.4 of Division 1300 of these specifications when submitting an equivalent product.
41

42 5. Product Options: Where Specification paragraphs or subparagraphs refer to "Product Options and
43 Substitutions," indicate that size, profiles, and dimensional requirements on Drawings are based on
44 a specific product or system; provide the specific product or system or an equivalent product or
45 system by another manufacturer. Comply with provisions of "Product Options and Substitutions,"
46 Section 1.4 of Division 1300 of these specifications when submitting an equivalent product.
47

48 6. Basis of Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design
49 Products" introduce or refer to a list of manufacturers' names, provide either the specified product
50 or an equivalent. Drawings and Specifications indicate sizes, profiles, dimensions and other
51 characteristics that are based on the product names. Comply with the provisions of "Product Options
52 and Substitutions," Section 1.4 of Division 1300 of these specifications when submitting an
53 equivalent product.
54
55

56 1.3 MISCELLANEOUS SUBMITTALS

- 1
- 2 A. Miscellaneous submittals related directly to the work include warranties, maintenance agreements,
- 3 workmanship bonds, survey data and reports, physical work records, quality testing and certifying
- 4 reports, copies of industry standards, record drawings, field measurement data, operating and
- 5 maintenance materials, overrun stock, and similar information, devices and materials applicable to the
- 6 work and not processed as shop drawings, product data or samples.
- 7
- 8 B. Refer to sections for specific general requirements on warranties, product/workmanship bonds, and
- 9 maintenance agreements. In addition to copies desired for Contractor's use, furnish 2 executed copies,
- 10 except furnish 3 additional copies where required for maintenance manuals.
- 11
- 12 C. For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases,
- 13 jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents,
- 14 correspondence and records established in conjunction with compliance with standards and regulations
- 15 bearing upon performance of the work.
- 16

17 1.4 PRODUCT OPTIONS AND SUBSTITUTIONS

18 A. DEFINITIONS

- 19
- 20
- 21 1. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken
- 22 from previously purchased stock. The term "product" includes the terms "material," "equipment,"
- 23 "system," and terms of similar intent.
- 24
- 25 a. Named Products: Items identified by manufacturer's product name, including make or model
- 26 number or other designation, shown or listed in manufacturer's published product literature,
- 27 that is current as of date of the Contract Documents.
- 28 b. New Products: Items that have not previously been incorporated into another project or
- 29 facility, except that products consisting of recycled-content materials are allowed, unless
- 30 explicitly stated otherwise. Products salvaged or recycled from other projects are not
- 31 considered new products.
- 32 c. Equivalent Product: Product that is demonstrated and approved through submittal process,
- 33 or where indicated as a product substitution, to have the indicated qualities related to type,
- 34 function, dimension, in-service performance, physical properties, appearance, and other
- 35 characteristics that equal or exceed those of specified product.
- 36
- 37 2. Substitutions: Changes in products, materials, equipment, and methods of construction from those
- 38 required by the Contract Documents and proposed by Contractor.
- 39 3. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and
- 40 accompanied by the words "basis of design," including make or model number or other designation,
- 41 to establish the significant qualities related to type, function, dimension, in-service performance,
- 42 physical properties, appearance, and other characteristics for purposes of evaluating comparable
- 43 products of other named manufacturers.
- 44 4. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a
- 45 particular product and specifically endorsed by manufacturer to Owner.
- 46 5. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either
- 47 to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- 48 6. **Buy American Requirement: the Contractor shall comply with N.J.S.A 52:32-1 and N.J.S.A.**
- 49 **52:33-1 et seq., which prohibits the use by the Contractor or subcontractors of materials or**
- 50 **farm products produced and manufactured outside of the United States on any public work.**
- 51

52 B. General Requirements:

- 53
- 54 1. The requirements for substitutions do not apply to specified Contractor options on products and
- 55 construction methods. Revisions to Contract Documents, where requested by Owner or Architect
- 56 are changes, not substitutions. Contractor's determination of and compliance with governing

- 1 regulations and orders issued by governing authorities do not constitute substitutions and do not
2 constitute a basis for change orders. Otherwise, Contractor's requests for changes in products,
3 materials, and methods of construction required by Contract Documents are considered requests for
4 substitutions, and are subject to requirements hereto.
- 5 2. To the greatest extent possible, provide products, materials and equipment of a singular generic
6 kind and from a single source.
 - 7 3. Where more than one choice is available as options for Contractor's selection of a product or
8 material, select an option that is compatible with other products and materials already selected. Total
9 compatibility among options is not assured by limitations within Contract Documents, but shall be
10 provided by Contractor. Compatibility is a basic general requirement of product/material selections.
 - 11 4. Any and all contractor substitutions that require additional work by other trades not specifically
12 called for in the documents shall be paid for by the contractor requesting the substitution if any
13 other trade increase is required.
 - 14 5. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or
15 other considerations, after deducting additional responsibilities Owner must assume. Owner's
16 additional responsibilities may include compensation to Architect for redesign and evaluation
17 services, increased cost of other construction by Owner, and similar considerations.
- 18
- 19 C. Submittals: Submit 6 copies, utilizing Substitution Request Form, CSI Form 13.1.A, fully identified for
20 product or method being requested for substitution, including related specification section and drawing
21 numbers, and fully documented to show compliance with requirements for substitutions. Include product
22 data/drawings, description of methods, samples where applicable, Contractor's details comparison of
23 significant qualities between specified item and proposed substitution, statement of effect on construction
24 time and coordination with other affected work and contractors, cost information or proposal, warranty
25 information, compatibility with other work, approval of all authorities having jurisdiction, and Contractor's
26 statement to the effect that proposed substitution will result in overall work equal to or better than work
27 originally indicated.
- 28
- 29 D. Contractor's options for selecting products are limited by Contract Documents requirements, and governing
30 regulations. Required procedures include, but are not necessarily limited to, the following for various
31 indicated methods or specifying:
- 32
- 33 1. Single product/manufacturer name; provide product indicated or equivalent, except advise
34 Architect before proceeding, where known that named product is not a feasible or acceptable
35 selection.
 - 36 2. Two or more product/manufacturer names; provide one of the named products or equivalent, at
37 Contractor's option; but excluding products which do not comply with requirements. Advise
38 Architect before proceeding.
 - 39 3. Equivalent; where named products in Specifications text are accompanied by the term "or
40 equivalent", or other language of similar effect, comply with those Contract Documents provisions
41 concerning substitutions for obtaining Architect's approval of equivalent product.
 - 42 4. Named, except as otherwise indicated, is defined to mean manufacturer's name for product, as
43 recorded in published product literature, of latest issue as of date of Contract Documents. Refer
44 requests to use products of a later or earlier model to Architect for acceptance before proceeding.
 - 45 5. Where compliance with an imposed standard, code or regulation is required, selection from among
46 products that comply with requirements including those standards, codes and regulations, is
47 Contractor's option.
 - 48 6. Provide products which comply with specific performances indicated, and which are recommended
49 by manufacturer, in published product literature or by individual certification, for application
50 indicated. Overall performance of a product is implied where product is specified for specific
51 performance.
 - 52 7. Provide products that have been produced in accordance with prescriptive requirements, using
53 specified ingredients and components, and complying with specified requirements for mixing,
54 fabricating, curing, finishing, testing and similar operations in manufacturing process.

- 1 8. Where matching of an established sample is required, final judgment of whether a product proposed
2 by Contractor matches sample satisfactorily is Architect's judgment. Where no product within
3 specified cost category is available, which matches sample satisfactorily and complies with
4 requirements, comply with Contract Document provisions concerning substitutions for selection of
5 a matching product outside established cost category or not complying with requirements.
6 9. Where specified product requirements include "...as selected from manufacturer's full range of
7 colors, patterns, textures..." or words of similar effect, the selection of manufacturer and basic
8 product data is to comply with requirements of the Contract, and selection shall be from the full
9 range of products within the requirements. Where specified product requirements include "... as
10 the industry...", or words to that effect, selection of product complying with requirements, is
11 Architect's selection, including designation of manufacturer, where necessary to obtain desired
12 color, pattern or texture.
13
- 14 E. Substitutions may be permitted by the Architect, if, in his opinion, the requirements of the proposed
15 substitution comply with the requirements specified for the material, article or piece of equipment;
16 however, the Architect is not required to permit substitution pursuant to the case of Whitten Corporation
17 vs. Paddock, Incorporated, United States District Court, Massachusetts, April 12, 1974, affirmed by the
18 Federal First Circuit Court, December 14, 1974.
19
- 20 F. After award of contract, the Contractor may submit substitutes to the Architect for review, fully
21 documented and certified, and accompanied by a proposal for a reduction in the Contract Sum.
22
- 23 G. Contractor's request for substitution will be received and considered when extensive revisions to Contract
24 Documents are not required and changes are in keeping with general intent of Contract Documents; when
25 timely, fully documented and properly submitted; and when one or more of following conditions is
26 satisfied, all as judged by Architect. Otherwise, requests will be returned without action except to record
27 noncompliance with these requirements.
28
- 29 1. Where request is directly related to an "equivalent" clause or other language of same effect in
30 Contract Documents.
31 2. Where required product, material or method cannot be provided within Contract Time, but not as a
32 result of Contractor's failure to pursue the work promptly or coordinate various activities properly.
33 3. Where required product, material or method cannot be provided in a manner which is compatible
34 with other materials of the work, or cannot be properly coordinated therewith, or cannot be
35 warranted (guaranteed) as required, or cannot be used without adversely affecting Owner's
36 insurance coverage on completed work, or will encounter other substantial noncompliances which
37 are not possible to otherwise overcome except by making requested substitution, which Contractor
38 thereby certifies to overcome such incompatibility, uncoordination, nonwarranty, noninsurability
39 or other noncompliance as claimed.
40 4. Where substantial advantage is offered Owner, in terms of cost, time or other valuable
41 considerations, after deducting offsetting responsibilities Owner may be required to bear, including
42 additional compensation to Architect for redesign and evaluation services, increased cost of other
43 work by Owner or separate Contractors, and similar considerations.
44
- 45 H. Contractor's submittal of, and Architect's acceptance of, shop drawings, product data or samples which
46 indicate work not complying with requirements of Contract Documents, does not constitute an acceptable
47 and valid request for, nor approval of, a substitution.
48
- 49 I. **QUALITY ASSURANCE**
50
- 51 Compatibility of Options: If Contractor is given option of selecting between two or more products for
52 use on Project, product selected shall be compatible with products previously selected, even if previously
53 selected products were also options.
54
- 55 1. Each contractor is responsible for providing products and construction methods compatible with
56 products and construction methods of other contractors.

- 1 2. If a dispute arises between contractors over concurrently selectable but incompatible products,
2 Architect will determine which products shall be used.
3

4 J. EQUIVALENT PRODUCTS
5

6 Where products or manufacturers are specified by name, Contractor must submit the following, in
7 addition to other required submittals, to obtain approval of an unnamed product proposed as an
8 equivalent:
9

- 10 1. Evidence that the proposed product does not require extensive revisions to the Contract
11 Documents, that it is consistent with the Contract Documents and will produce the indicated
12 results, and that it is compatible with other portions of the Work.
13 2. Detailed comparison of significant qualities of proposed product with those named in the
14 specifications. Significant qualities include attributes such as performance, weight, size,
15 durability, visual effect, and specific features and requirements indicated.
16 3. Evidence that proposed product provides specified warranty.
17 4. List of similar installations for completed projects with project names and addresses and names
18 and addresses of architects and owners, if requested.
19 5. Samples, if requested.
20

21 1.5 OPERATION AND MAINTENANCE INSTRUCTIONS AND EQUIPMENT WARRANTIES
22

23 A. The Contractor shall orient and instruct the responsible maintenance personnel designated by the Owner
24 in the Operation of all equipment and shall provide the maintenance personnel with pertinent literature and
25 operational manuals for all equipment. Date and time of demonstrations shall be mutually agreed upon
26 with the Owner. Provide qualified personnel for as long as necessary to fully orient and instruct the Owner.
27 Contractor shall videotape instruction session and provide owner with completed video.
28

29 B. The manuals shall be submitted in (quadruplicate) 3-ring loose-leaf type binders to the Architect for
30 approval with all additional information that the Architect may request and considers necessary for the
31 proper servicing and maintenance of all equipment. Manuals are to include plain paper copies of approved
32 shop drawings and catalog cuts. The quality of the copies may be subject to approval by the Architect.
33 Upon completion and approval, 3 copies will be forwarded to the Owner and one copy retained by the
34 Architect.
35

36 C. Manuals shall include no less than the following:

- 37 1. Operating Procedures:
38 a. Typewritten procedures indicating each mode of operation of each piece of equipment or
39 system. Procedures shall indicate the status of each component of a system in each operating
40 mode.
41 b. Procedures shall indicate names, symbol numbers, valve tags, circuit numbers, schematic
42 control and wiring diagrams, locations of thermostats, manual starters, control cabinets, and
43 other controls of each system.
44 c. Emergency shutdown procedures for each piece of equipment or system, both automatic and
45 manual as appropriate.
46 2. Maintenance Schedule: Typewritten schedule describing manufacturer's recommended schedule of
47 maintenance and maintenance procedures.
48 3. Catalog cuts and shop drawings:
49 a. Catalog cuts shall clearly indicate the exact model and type of each piece of equipment
50 installed in the Project, including all options provided.
51 b. Catalog cuts shall fully describe equipment including physical, electrical, mechanical and
52 other characteristics, performance characteristics and installation or erection diagrams.
53 c. Catalog cuts shall indicate spare part numbers and name, address and telephone number of
54 local representative or service department.
55 4. Typewritten list of all subcontractors on the Project including name, address, telephone number and
56 responsibility on the Project.

- 5. Manuals shall be indexed with dividers indicating each system or piece of equipment.
- 6. Warranties, permits, inspection stickers/approvals and Certificate of Occupancy are to be included.

D. Required equipment warranties shall be submitted in three copies to the Architect.

E. The Contractor shall video tape all instructional sessions and demonstrations and provide the Owner with a copy of the videotape at the end of all demonstrations.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

3.1 ACTION ON SUBMITTALS

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.

B. The Architect will review and stamp submitted shop drawings in one of the following ways (the actual stamp may be different; below language is shown for an example only)

- 1. "No Exceptions Taken": Approved.
- 2. "Make Corrections Noted": Approved, provided the work complies with corrections marked on the submittal.
- 3. "Revise and Resubmit": Do not commence work of this submittal. Revise and resubmit or prepare a new submittal; comply with notations marked on submittal.
- 4. "Rejected": Fundamentally not in compliance. Prepare a new submittal. No notations or comments made.

C. Work shall be executed in accordance with "Approved", "Approved As Noted", or "Resubmit for Record" stamp only.

D. Architect's review of shop drawings/submittals will constitute checking for general arrangement only, and shall not relieve the Contractor of responsibility for complete compliance with Drawings and Specifications. Contractor shall be responsible for quantities and dimensions to assure a proper fit under field conditions.

3.2 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.

3.3 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

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1 all required color information, nor will an extra be entertained if the selected color is not available from
2 the manufacturer the Contractor intended to use but neglected to submit.

3

4 C. The Contractors are reminded of the requirement to declare all substitutions within 20 days of execution
5 of their Contract as specified.

6 END OF SECTION 01300

SECTION 01310
QUALITY CONTROL

PART 1 - GENERAL

1.01 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.

1.02 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.
- B. Contractors are responsible for all testing associated with their work (foundations, soils compaction, concrete, steel, roof material testing etc.) and shall submit the name of their proposed testing agency within 15 days of Notice-to-Proceed. 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.

1.03 ROOF DRAIN TESTING

- A. Pre-Construction Testing: Prior to the start of any work on the roof, the Contractor shall water-flow test all roof drains (5 minutes at each drain), to determine if any full or partial drain clogs exist in the drainage system.
 - 1. The Owner shall have a representative at the test.
 - 2. The results of the testing shall be reported to the Owner, in writing, prior to the start of work.
 - 3. The Owner will be responsible for correction of any drain-age problems reported by the Contractor prior to the start of work.
 - 4. Any drains, piping or other components, whether exposed, concealed, below grade, etc., found to be clogged after the start of construction, and not reported to the Owner prior to the start of construction, shall be cleared, repaired or replaced as required to restore full drainage capacity. All work shall be performed by the Contractor at no additional cost to the Owner, including patching, repair or re-placement of any materials, finishes, landscaping, etc., disturbed in gaining access to drainage components.

- B. Post-Construction Testing: When all work reaches substantial completion, the Contractor shall water-flow test all roof drains (5 minutes at each drain), to determine if any full or partial drain clogs exist in the drainage system.
 - 1. The Owner shall have a representative at the test.
 - 2. Report the results of testing to the Owner in writing prior to preparation of the final punchlist inspection.
 - 3. Any drains, piping or other components, whether exposed, concealed, below grade, etc., found to be clogged shall be cleared, repaired or replaced as required to restore full drainage capacity. All work shall be performed by the Contractor at no additional cost to the Owner, including patching, repair or replacement of any materials, finishes, landscaping, etc., disturbed in gaining access to drainage components.

1.04 ROOF DRAIN PROTECTION

- A. Contractor is to make every effort to prevent materials from entering roof drains. Contractor is to install roof drain filters prior to removal of any roof materials.
- B. All debris is to be cleaned away from drains at the end of each day.

PART 2 - PRODUCTS

2.01 ROOF DRAIN FILTERS

- A. Tiddy Gutter DF100001 Roof Drain Foam Filter or Equal.

PART 3 - EXECUTION

3.01 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 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.

3.02 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.

3.03 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 two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's/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.

3.04 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to existing conditions and dimensions. If discrepancies are discovered, notify Architect and Owner promptly.

3.05 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.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. 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.
- E. Tools and Equipment: Only use the best quality tools and equipment with proper attenuations for the latest acceptable sound levels.
- F. 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.
- G. 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.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

END OF SECTION 01310

1 **SECTION 01320**

2 **TEMPORARY FACILITIES**

3
4 **PART 1 - GENERAL**

5
6 1.01 DESCRIPTION OF REQUIREMENTS

7
8 A. Specific administrative and procedural minimum actions are specified in this section, as extensions of
9 provisions in General Conditions and other Contract Documents. Nothing in this section is intended to
10 limit types and amounts of temporary work required, and no omission from this section will be recognized
11 as an indication that such temporary activity is not required for successful completion of the work and
12 compliance with requirements of Contract Documents.

13
14 B. Each Contractor is specifically assigned certain responsibilities for temporary facilities to be used by all
15 Contractors, other entities at the site, the Owner's work forces and other personnel including occupants of
16 the project, the Owner, the Architect, test agencies, personnel of governing authorities, and similar entities
17 and personnel authorized to be at the project site during construction. In general, each Contractor is
18 assigned the responsibilities for installation, operation and removal of each temporary facility which is
19 related by recognized trades to its scope of contract work; and, except as otherwise indicated, each is
20 responsible for costs and use charges associated therewith, including fuel, power usage, water usage and
21 similar usage costs. The Contractor is responsible for temporary facilities not related to any other
22 Contractor's scope of contract work and not otherwise specifically assigned, as designated by the Architect.

23
24 C. No costs or usage charges for temporary facilities are chargeable to the Owner, nor can any Contractor's
25 cost or usage charges for temporary facilities be accepted as the basis for a change order extra. The total
26 costs and usage charges for temporary facilities are included, collectively, in the Contract Amounts.

27
28 1.02 GENERAL REQUIREMENTS

29
30 A. Each Contractor shall provide and operate all hoists, cranes, helicopters and furnish and erect all ladders
31 and scaffolding required by him and his subcontractors, constructed to afford proper protection to
32 craftsmen, their Work and other Work in progress and previously executed.

33
34 1.03 JOB CONDITIONS

35
36 A. Each Contractor shall establish and initiate use of each temporary facility at time first reasonably required
37 for proper performance of the total work of project. Terminate use and remove facilities at earliest
38 reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced
39 the need.

40
41 B. Each Contractor shall install, operate, maintain and protect temporary facilities in a manner and at locations
42 that will be safe, nonhazardous, sanitary, protective of persons and property, and free of deleterious effects.

43
44 1.04 ENVIRONMENTAL PROTECTION

45
46 A. Each Contractor shall provide facilities, establish procedures, and conduct construction activities in a
47 manner that will ensure compliance with environmental and other regulations controlling construction ac-
48 tivities at project site. The Contractor shall designate one person, the Construction Superintendent or other,
49 to enforce strict discipline on activities related to generation of wastes, pollution of air/water/soil,
50 generation of noise, and similar harmful or deleterious effects which might violate regulations or
51 reasonably irritate persons at or in vicinity of project site. Anti-pollution measures required by D.E.P., as
52 applicable are to be followed.

53
54 1.05 SECURITY

- 1
2 A. The Contractor shall maintain complete security on the site at all times during and outside of normal
3 working hours to protect the Work and all field offices, and to secure the area of construction by
4 restricting all trespassers.
5 • This means locking the doors and/or gates. A guard is not required.
6
7 B. Provide a six foot chain link fence around any compounds and/or dumpsters related to this project.
8

9 1.06 TEMPORARY CONSTRUCTION FACILITIES

- 10
11 A. Where mud, snow, ice or other hazardous conditions exist in the purview (Scope of Work) of any Sub
12 Contractor, the Contractor shall remove the hazards immediately and replace with suitable material for the
13 other contractors use. If the Owner is compelled to remove the hazards with their own forces due to inaction
14 by the Contractor, then that Contractor will be back-charged for the work performed by the Owner.
15
16 B. No welding, cutting by torch, or Work utilizing or causing flammable waste shall be done unless adequate
17 fire protection is provided and maintained for the duration of the Work in the area of operations.
18

19 1.07 DEBRIS CONTROL (Refer to Section 01524 for further delineation)

- 20
21 A. The Contractor shall be responsible for daily cleaning up of spillages and debris resulting from his
22 operations and from those of his Subcontractors; and shall be responsible for complete removal and
23 disposition of hazardous and toxic waste materials. The Contractor shall provide containers at grade,
24 sufficient for the depositing of nonhazardous/nontoxic waste materials, and shall remove such waste
25 materials from project site at least weekly during cold weather (daily high temperatures below 50°F) and
26 at least twice weekly during mild and warm weather.
27 • Contractor is responsible to provide and pay for all dumpsters.
28
29 B. The Contractor shall daily clean all mud, dirt and debris resulting from all trades operations from the
30 adjacent streets, sidewalks, drives and parking areas and shall repair all damage caused by the cleaning to
31 the satisfaction of the Owner.
32
33 C. The Contractor is to provide and maintain appropriate means of trash disposal (i.e., chutes) to
34 grade/dumpster. Multiple units may be required and shall be figured for in the bid.
35

36 **PART 2 - EXECUTION**

37
38 2.01 ENCLOSURES

- 39
40 A. At earliest possible date, the Contractor shall secure project area against unauthorized entrance at times
41 when personnel are not working. Provide secure temporary enclosure at ground floor and other locations
42 of possible entry, with locked entrances.
43
44 B. Where any form of demolition will expose the interior of the building to weather, demolition shall follow
45 the erection of weatherproof walls by the Contractor installed inside the demolition line, sealed and flashed,
46 as required, to keep all water from the building interior. Keep temporary weatherproofing in place until
47 new construction has been completed to the stage where water will not enter the building.
48
49 C. The Contractor shall provide constant protection against rain, wind, storms, frost or heat to maintain the
50 work, materials, apparatus and fixtures free from damage. At the end of each day's work, cover work likely
51 to be damaged. During cold weather, protect work from damage by freezing and provide such enclosures
52 and heating apparatus as may be necessary diligently to prosecute the Work without stoppage for reason
53 of unfavorable weather.
54

- 1 D. Wherever a Contractor provides openings through walls or slabs, each location shall be adequately
2 protected at the end of each working day with temporary enclosures to make these areas tight. Openings
3 through exterior walls shall be watertight.
4
- 5 E. Install an 8 foot high fence around the entire site with wind screening. Provide gates as needed to properly
6 access the site to complete the work. Remove the fence once the project is substantially completed. Fence
7 is to have poles into the ground where the fence will be untouched per a period of time, and can have feet
8 with sand bags in areas that the fence may have to be moved occasionally to not interfere with the work.
9
- 10 F. **For renovation projects: Contractor is to maintain the building in a water tight condition during all**
11 **construction activities by whatever means necessary. Contractor is to never do any more removal**
12 **work during any given day than that contractor can replace in the same day in order to make sure**
13 **the occupants of the building will be protected from the possibility of water leakage into the building.**
14 **Should any leakage occur, the contractor is to immediately make the building water tight (on a 24**
15 **hour basis) and repair any damage caused by the leakage or replace any equipment damaged by the**
16 **leakage.**
17
- 18 2.02 TEMPORARY ELECTRICITY
19
- 20 A. Power is available on site.
21
- 22 2.03 TEMPORARY VENTILATION
23
- 24 A. A trade requiring ventilation for Work shall provide fans to induce circulation of air.
25
- 26 2.04 TEMPORARY TELEPHONES
27
- 28 A. Each Contractor is responsible for their own telephone service and for payment of all charges relating to
29 that service.
30
- 31 2.05 TEMPORARY WATER
32
- 33 A. Water is available on site.
34
- 35 2.06 TEMPORARY SANITARY FACILITIES
36
- 37 A. Starting at time of start of work at project site, the Contractor shall provide and maintain self-contained
38 toilet units of type acceptable to governing authorities, adequate, at all stages of construction, for use of
39 personnel at project site. Provide separate facilities for male and female personnel when both sexes are
40 working, in any capacity, at project site. Facilities shall remain in use until completion of project. Use of
41 permanent facilities will not be permitted.
42
- 43 2.07 REMOVAL AND RESTORATION
44
- 45 A. Prior to acceptance of the Project, each contractor shall remove temporary work for which he has been
46 responsible.
47
- 48 2.08 OWNER'S RIGHTS
49
- 50 A. If any Contractor fails to carry out his responsibilities in providing temporary facilities, as set forth above,
51 the Owner shall have the right to take such action as he deems proper for the protection and conduct of the
52 Work, and to deduct the cost thereof from the amount due the Contractor at fault.
53
- 54
- 55 B. Extended work days, hours, shifts, weekend work, etc. may be allowed upon coordination and approval
56 by Architect, Owner at no additional cost to the Owner.

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1 • Should the schedule begin to slip, for any reason, each contractor will be required to work additional
2 shifts or weekends to recover the lost time. Should there be a cost to the College for this overtime
3 work, the contractor will be required to reimburse the owner for said costs.
4

5 2.09 Parking: parking is allowed for two vehicles only. All other parking is to be at the TCNJ Carlton Avenue
6 parking lot. The contractor is responsible to shuttle workers back and forth as needed.

7 END OF SECTION 01320

1 **SECTION 01322**

2 **PHOTOGRAPHIC DOCUMENTATION**

3
4 **PART 1 – GENERAL**

5
6 1.01 RELATED DOCUMENTS

- 7
8 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and
9 other Division 1 Specification Sections, apply to this Section.

10
11 1.02 SUMMARY

- 12
13 A. This Section includes administrative and procedural requirements for the following work by the General
14 Contractor (other primes are encouraged to document the site and construction, but not required):

15
16 1. Preconstruction videotapes.

- 17
18
19 B. Related Sections include the following:

20
21 1. All of Division 1.

22
23 1.03 SUBMITTALS

- 24
25 A. Qualification Data: For photographer.

- 26
27 B. Videotapes: Submit 3 copies of each videotape with protective sleeve or case within seven days of
28 recording. Remove safety tab to prevent accidental re-recording.

29
30 1. Identification: On each copy, provide an applied label with the following information:

31
32 a. Name of Project.

33 b. Name and address of photographer.

34 c. Name of Architect

35 d. Name of Contractor.

36 e. Date videotape was recorded.

37 f. Description of vantage point, indicating location, direction (by compass point), and
38 elevation or story of construction.

39
40 1.04 QUALITY ASSURANCE

- 41
42 A. Photographer Qualifications: An individual who has been regularly engaged as a professional
43 photographer of construction products for not less than three years.

44
45 1.05 COORDINATION

- 46
47 A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including
48 access to project site and use of temporary facilities, including temporary lighting required to produce
49 clear, well-lit photographs without obscuring shadows.

50
51 1.06 USAGE RIGHTS

- 52
53 A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of
54 photographic documentation.

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PART 2 – PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

- A. Digital format as agreed to at the project kick off meeting.

PART 3 – EXECUTION

3.01 CONSTRUCTION VIDEOTAPES

- A. Digital Photographer: Engage a qualified commercial videographer to record construction digital recordings.
- B. Preconstruction: Before starting demolition or construction record, videotape (digital) of Project site, interior and exterior.
 - 1. Show protection efforts by the Contractor.

END OF SECTION 01322

1 **SECTION 01330**

2 **CONTRACT CLOSEOUT**

3
4 **PART 1 – GENERAL**

5
6 1.01 DEFINITION

- 7
8 A. Closeout is hereby defined to include general requirements near end of Contract Time, in preparation for
9 final acceptance, final payment, normal termination of Contract, occupancy by Owner and similar actions
10 evidencing completion of the work. Specific requirements for individual units of work are specified in
11 sections of Divisions 2 through 16. Time of closeout is directly related to Substantial Completion, and
12 therefore may be either a single time period for entire work or a series of time periods for individual parts
13 of the work which have been certified as substantially complete at different dates. That time variation, if
14 any, shall be applicable to other provisions of this section.
15
16 B. Substantial completion shall be defined that every material item has been installed. Nothing is missing
17 and therefore, the punch list can begin.
18

19 1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION

- 20
21 A. Prior to requesting the Architect's inspection for certification of substantial completion, for either entire
22 work or portions thereof, complete the following and list known exceptions in request:
23
24 1. In progress payment request coincident with or first following date claimed, show either 100%
25 completion for portion of work claimed as substantially complete, or list incomplete items, value of
26 incomplete items, and reasons for being incomplete.
27
28 2. Include supporting documentation for completion as indicated in these Contract Documents.
29
30 a. Prepare a list of items to be completed and corrected (punch list), the value of items on the
31 list, and reasons why the Work is not complete.
32
33 3. Submit statement showing accounting of changes to the Contract Sum.
34 4. Advise Owner of pending insurance change over requirements.
35 5. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final
36 certifications and similar documents.
37 6. All fire sprinklers, devices, alarm system, roofing system, doors, insulation, etc. requiring FM
38 Research approval to submit certification from Factory Mutual.
39 7. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to
40 services and utilities, including occupancy permits, operating certificates, and similar releases.
41 8. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner obtaining
42 a signed receipt of materials delivered. Refer to individual work sections for required quantities of
43 spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical
44 units to be submitted.
45 9. Complete start up testing of systems, and instructions of Owner's operating/maintenance personnel.
46 Discontinue, or change over, and remove from project site temporary facilities and services, along
47 with construction tools and facilities, mockups, and similar elements.
48 10. Complete final clean up requirements.
49 11. Touch up and otherwise repair and restore marred exposed finishes.
50 12. Inspection: Submit a written request for inspection for Substantial Completion to Project Manager.
51 On receipt of request, Architect and Project Manager will either proceed with inspection or notify
52 Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial
53 Completion after inspection, the Project Manager will notify Contractor of items, either on
54 Contractor's list or additional items identified by Architect that must be completed or corrected
before certificate will be issued.

- 1
- 2
- 3 1. Reinspection: Request reinspection when the Work identified in previous inspections as
- 4 incomplete is completed or corrected.
- 5 2. Results of completed inspection will form the basis of requirements for Final Completion.
- 6
- 7 B. Upon receipt of Contractor's request, the Project Manager and Architect will proceed with substantial
- 8 completion inspection. Following inspection, the Architect will either prepare the certificate of substantial
- 9 completion, or advise the Contractor of work which shall be performed prior to issuance of certificate.
- 10 The work remaining to be performed shall be completed prior to the punch list for final acceptance.
- 11
- 12 C. Upon receipt of Contractor's notice that work has been completed, including all punch list items, but
- 13 excepting incomplete items delayed because of circumstances acceptable to the Project Manager and
- 14 Architect, the Project Manager and Architect will reinspect the work. Upon completion of reinspection,
- 15 the Architect will either prepare the certificate of final acceptance or advise the Contractor of work not
- 16 completed or obligations not fulfilled as required for final acceptance.
- 17
- 18 D. In the event that the work is not completed or obligations are not fulfilled as required for final acceptance
- 19 and the Architect/CM is required to reinspect the work more often than the two inspections described, the
- 20 Contractor shall compensate the Architect and/or the Project Manager at the rate of \$500.00 for each
- 21 additional site visit required for reinspections. The compensation shall be processed by change order as a
- 22 deduction to the Contractor's Contract Sum, which amount will be paid to the Architect or Project Manager
- 23 by the Owner, through a change order as an addition to the Architect's or Project Manager's Contract Sum.
- 24
- 25 E. **Substantial Completion shall be defined for this project that every element of the**
- 26 **project/construction and the contract, based on the contract and amended drawings and**
- 27 **specification sections, are installed and the building is deemed complete, less repairs and/or touch**
- 28 **up type work that would be generally referred to as punchlist work. If any components of the**
- 29 **building, or site work associated with this contract are not installed, the project cannot be deemed**
- 30 **substantially completed.**
- 31
- 32

33 1.03 PREREQUISITES TO FINAL ACCEPTANCE

- 34
- 35 A. Prior to requesting Project Manager and Architect's final inspection for certification of final acceptance
- 36 and final payment, complete the following and list known exceptions, in request:
- 37
- 38 1. Submit final payment request with final releases and supporting documentation not previously
- 39 submitted and accepted. Include certificates of insurance for products and completed operations
- 40 where required.
- 41 2. Submit release of liens for all subcontractors.
- 42 3. Submit Contractor's statement that his final application, as presented, is the final bill and no other
- 43 claims will be presented.
- 44 4. Submit updated final statement, accounting for additional changes to Contract Sum including
- 45 change orders and allowances.
- 46 5. Submit certified copy of Architect's final punch list of itemized work to be completed or corrected,
- 47 stating that each item has been completed or otherwise resolved for acceptance, endorsed and
- 48 dated by Architect.
- 49 6. Submit one set of record documents, bound copies of maintenance/operating manuals, final project
- 50 photographs, damage or settlement survey, property survey, and similar final record information.
- 51 7. Complete final clean up requirements.
- 52 8. Touch up and otherwise repair and restore marred exposed finishes.
- 53 9. Submit notarized consent of surety to final payment.
- 54 10. Submit final liquidated damages settlement statement, if required, acceptable to Project Manager
- 55 and the Owner.

- 1 11. Revise and submit evidence of final, continuing insurance coverage complying with insurance
- 2 requirements.
- 3 12. A letter from the Owner's representative certifying that he has been properly instructed in the opera-
- 4 tion and maintenance of equipment by the Contractor.
- 5 13. 10% one year Maintenance Bond.
- 6 14. Underwriter's Certificate or Electrical Sub Code Official's Approval.
- 7 15. Fire Alarm Certification and Description - NFPA form 72C including local County of Chester.
- 8 16. HVAC Contractor to submit certified balancing report.
- 9 17. Final acceptance by Architect of record documents

10
11 B. Except as otherwise indicated or requested by Project Manager/Architect, remove temporary protection
12 devices and facilities that were installed during course of the work to protect previously completed work
13 during remainder of construction period.

14
15 1.04 CLEAN UP

- 16
17 A. Remove waste materials from site and dispose of in a lawful manner.

18
19 **PART 2 - PRODUCTS**

20
21 NOT APPLICABLE

22
23 **PART 3 - EXECUTION**

24
25 3.01 CLEANING

- 26
27 A. Where extra materials of value remaining after completion of associated work have become Owner's
28 property, dispose of these to Owner's best advantage as directed.
- 29
30 B. After Substantial Completion of the Work, each Contractor shall do the final cleaning of the surfaces of
31 his installations as may be required by the various Specification sections.
- 32
33 C. After each Contractor has cleaned their work, The General Contractor shall engage a professional cleaning
34 service to perform final cleaning of the work consisting of cleaning each surface or unit to normal clean
35 condition. Comply with manufacturer's instructions for cleaning operations and chemicals. The following
36 are examples, but not by way of limitation, of cleaning levels required:
- 37
38 1. Remove labels that are not required as permanent labels.
- 39 2. Clean transparent materials, including mirrors and window/door glass, to a polished condition,
40 removing substances that are noticeable as vision obscuring materials. Replace broken glass and
41 damaged transparent materials.
- 42 3. Clean exposed exterior and interior hard surfaced finishes, to a dirt free condition, free of dust,
43 stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid
44 disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original
45 reflective conditions.
- 46 4. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and
47 similar equipment; remove excess lubrication and other substances.
- 48 5. Remove debris and surface dust from limited access spaces including roofs, plenums, shafts,
49 trenches, equipment vaults, manholes, attics and similar spaces.
- 50 6. Vacuum and clean carpeted surfaces and similar soft surfaces.
- 51 7. Clean light fixtures and lamps to function with full efficiency.
- 52 8. Clean and wax or polish all hard floors following manufacturer's instructions.
- 53 9. Clean all window surfaces inside and outside.
- 54 10. Perform final cleaning in, on and around all casework, sinks, toilets fixtures, etc.

- 1 11. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including
- 2 landscape development areas, of rubbish, waste material, litter, and other foreign substances.
- 3 12. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- 4 13. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- 5 14. Remove tools, construction equipment, machinery, and surplus material from Project site.
- 6 15. Remove snow and ice to provide safe access to building.
- 7 16. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains,
- 8 films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces.
- 9 Restore reflective surfaces to their original condition.
- 10 17. Sweep concrete floors broom clean.
- 11 18. Replace parts subject to unusual operating conditions.
- 12 19. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from
- 13 water exposure.
- 14 20. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers,
- 15 registers, and grills.
- 16 21. Clean ducts, blowers, and coils if units were operated without filters during construction.
- 17 22. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-
- 18 out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in
- 19 fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
- 20 23. Leave Project clean and ready for occupancy.
- 21

22 D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess
23 materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage
24 systems. Remove waste materials from Project site and dispose of lawfully.

25
26 3.02 RECORD DOCUMENTS (Refer to Section 01340, project requirements for submitting Record
27 Documents)

28
29
30 3.03 REMOVE TEMPORARY FACILITIES

31
32 A. At the completion of the work prior to final payment, remove all temporary facilities entirely from site,
33 including, but not limited to, the following: Field offices, trailers, shanties, sheds, job telephone, temporary
34 toilets, temporary enclosures, dust barriers and other temporary protection devices.

35
36 END OF SECTION 01330

1 **SECTION 01340**

2 **PROJECT RECORD DOCUMENTS**

3
4 **PART 1 - GENERAL**

5
6 1.01 SUMMARY

7
8 A. Section Includes:

- 9
10 1. Project record documents consisting of:
11 a. Record drawings.
12 b. Record project manual (specifications).

13
14 1.02 SUBMITTALS

15
16 A. Project Record Documents: Submit after substantial completion, but prior to final completion.

- 17
18 1. Record drawings: Submit in form of opaque prints.
19 a. Sets shall include all drawings, whether changed or not.
20 2. Other record documents: Submit originals or good quality photocopies.
21 3. Each Sub contractor is responsible for their respective trade, record documents and record drawings.
22 Combine with General Contractor record drawing documents for a complete set.

23
24 **PART 2 - PRODUCTS**

25
26 (NOT USED)

27
28 **PART 3 - EXECUTION**

29
30 3.01 MAINTENANCE OF PROJECT RECORD DOCUMENTS

- 31
32 A. Do not use record documents of any type for construction purposes.
33
34 B. Maintain record documents in a secure location at the site while providing for access by the contractor and
35 the architect during normal working hours; store in a fire-resistive room or container outside of normal
36 working hours.
37
38 C. Record information as soon as possible after it is obtained.
39
40 D. Assign a person or persons responsible for maintaining record documents.
41
42 E. Record the following types of information on all applicable record documents:
43
44 1. Dimensional changes.
45 2. New and revised details.
46 3. Revisions to electrical circuits.
47 4. Locations of utilities concealed in construction.
48 5. Particulars on concealed products which will not be easy to identify later.
49 6. Changes made by modifications to the contract; note identification numbers if applicable.
50 7. New information which may be useful to the owner, but which was not shown in either the contract
51 documents or submittals.

52
53 3.02 RECORD DRAWINGS

- 1 A. Maintain a complete set of opaque prints of the contract drawings, marked to show changes.
- 2 B. Where the actual work differs from that shown on the drawings, mark this set to show the actual work.
- 3
- 4 1. Mark location of concealed items before they are covered by other work.
- 5 2. Mark either record contract drawings or shop drawings, whichever are best suited to show the
- 6 change.
- 7
- 8 C. When the contractor is required by a provision of a modification to prepare a new drawing, rather than to
- 9 revise existing drawings, obtain instructions from the architect as to the drawing scale and information
- 10 required.
- 11
- 12 D. Keep drawings in labeled, bound sets.
- 13
- 14 1. Mark with red pencil.
- 15 2. Mark work of separate contracts with different colors of pencils.
- 16 3. Incorporate new drawings into existing sets, as they are issued.
- 17
- 18 E. Where record drawings are also required as part of operation and maintenance data submittals, copy marks
- 19 to another opaque print obtained from the architect.
- 20
- 21

22 3.03 RECORD PROJECT MANUAL

- 23
- 24 A. Maintain a complete copy of the project manual, marked to show changes.
- 25
- 26 B. Where the actual work differs from that shown in the project manual, mark the record copy to show the
- 27 actual work.
- 28
- 29 1. Include a copy of each addendum and modification to the contract.
- 30 2. In addition to the types of information required on all record documents, record the following types
- 31 of information:
- 32 a. Product options taken, when the specification allows more than one.
- 33 b. Proprietary name and model number of actual products furnished, for each product, material,
- 34 and item of equipment specified.
- 35 c. Name of the supplier and installer, for each product for which neither a product data submittal
- 36 nor a maintenance data submittal was specified.
- 37

38 3.04 TRANSMITTAL TO OWNER (through the Architect)

- 39
- 40 A. Collect, organize, label, and package ready for reference.
- 41
- 42 1. Bind print sets with durable paper covers.
- 43 2. Label each document (and each sheet of drawings) with "PROJECT RECORD
- 44 DOCUMENTS - This document has been prepared using information furnished by _____" [insert
- 45 the contractor's name], and the date of preparation.
- 46
- 47 B. Submit to the Project Manager for transmittal to the Architect, unless otherwise indicated.
- 48
- 49 C. Submit to the Architect four (4) sets of Operation and Maintenance Manuals in three-ring binders, by
- 50 volume, and indexed per binder (with one master index) to be transmitted to the Architect/Engineer for
- 51 approval: All to be submitted at one time, not piece meal. Indexing should follow the specification section
- 52 numbers.
- 53
- 54 • Include all inspection/approvals/certifications
- 55 • All approved submittals and cut sheets as well as manufacturer's operation and maintenance manuals
- 56 for each section.

February 14, 2020

The College of New Jersey
Centennial Hall – Partial Air Conditioning
Entech Engineering, Inc.

- 1 • Manuals are to be completed in volumes, three ring binders, starting with Division 1 and continuing
- 2 through the last projects Division. The number of volumes is determined by the number of spec section
- 3 the projects has and by the amount of paper/copies for complete sets of three ring binders.
- 4 • List of all contractors and vendors for the project with names, addresses and phone numbers.
- 5

6 END OF SECTION 01340

1 **SECTION 01524**

2 **CONSTRUCTION WASTE MANAGEMENT**

3
4 **PART 1 – GENERAL**

5
6 1.1 RELATED DOCUMENTS

- 7
8 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and
9 Division 1 Specification Sections, apply to this Section.

10
11 1.2 SUMMARY

- 12
13 A. This Section includes administrative and procedural requirements for the following:

- 14
15 1. Salvaging nonhazardous demolition and construction waste.
16 2. Recycling nonhazardous demolition and construction waste.
17 3. Disposing of nonhazardous demolition and construction waste.

- 18
19 B. Related Sections include the following:

- 20
21 1. All of Division 1 and attached specifications and drawings that make a part of this contract.
22
23

24 1.3 DEFINITIONS

- 25
26 A. Construction Waste: Building and site improvement materials and other solid waste resulting from
27 construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

- 28
29 B. Demolition Waste: Building and site improvement materials resulting from demolition or selective
30 demolition operations.

- 31
32 C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or
33 deposit in landfill or incinerator acceptable to authorities having jurisdiction.

- 34
35 D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

- 36
37 E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
38

39 1.4 SUBMITTALS

- 40
41 A. Waste Management Plan: Submit 4 copies of plan within 30 days of date established for the Notice to
42 Proceed.

- 43
44 B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and
45 organizations. Indicate whether organization is tax exempt.

- 46
47 C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations.
48 Indicate whether organization is tax exempt.

- 49
50 D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling
51 and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
52

- 1 E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and
2 incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
3
4
5

6 1.5 QUALITY ASSURANCE
7

- 8 A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
9
10 B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division
11 1. Review methods and procedures related to waste management including, but not limited to, the following:
12
13 1. Review and discuss waste management plan.
14 2. Review requirements for documenting quantities of each type of waste and its disposition.
15 3. Review and finalize procedures for materials separation and verify availability of containers and bins
16 needed to avoid delays.
17 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
18 5. Review waste management requirements for each trade.
19

20 1.6 WASTE MANAGEMENT PLAN
21

- 22 A. General: Develop plan consisting of waste identification, and waste reduction work plan. Indicate quantities
23 by weight or volume, but use same units of measure throughout waste management plan.
24
25 B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction
26 waste generated by the Work. Include estimated quantities and assumptions for estimates.
27
28 C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed
29 of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity
30 for each means of recovery, and handling and transportation procedures.
31
32 1. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include
33 list of their names, addresses, and telephone numbers.
34 2. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations,
35 include list of their names, addresses, and telephone numbers.
36 3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each
37 will accept. Include names, addresses, and telephone numbers.
38 4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address,
39 and telephone number of each landfill and incinerator facility.
40 5. Handling and Transportation Procedures: Include method that will be used for separating recyclable
41 waste including sizes of containers, container labeling, and designated location on Project site where
42 materials separation will be located.
43

44 **PART 2 - PRODUCTS (Not Used)**
45

46 **PART 3 – EXECUTION**
47

48 3.1 PLAN IMPLEMENTATION
49

- 50 A. General: Implement waste management plan as approved by Project Manager. Provide handling, containers,
51 storage, signage, transportation, and other items as required to implement waste management plan during the
52 entire duration of the Contract.
53
54 1. Comply with Division 1 Section "Temporary Facilities" for operation, termination, and removal
55 requirements.

1
2 B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as
3 appropriate for the Work occurring at Project site.

4
5 1. Distribute waste management plan to entities when they first begin work on-site. Review plan
6 procedures and locations established for salvage, recycling, and disposal.

7
8 C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum
9 interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

10
11 1. Designate and label specific areas on Project site necessary for separating materials that are to be
12 salvaged, recycled, reused, donated, and sold.

13 2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt,
14 environmental protection, and noise control.

15
16 3.2 SALVAGING DEMOLITION WASTE

17
18 A. Salvaged Items for Sale and Donation: Not permitted on Project site.

19
20 3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

21
22 A. General: Recycle beverage containers used by on-site workers.

23
24 B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling
25 waste materials shall accrue to the Contractor.

26
27 C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable
28 waste by type at Project site to the maximum extent practical.

29
30 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are
31 removed from Project site. Include list of acceptable and unacceptable materials at each container and
32 bin.

33
34 a. Inspect containers and bins for contamination and remove contaminated materials if found.

35
36 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and
37 shape stockpiles to drain surface water. Cover to prevent windblown dust.

38 3. Stockpile materials away from construction area.

39 4. Store components off the ground and protect from the weather.

40 5. Remove recyclable waste off Owner's property and transport to recycling receiving or processor.

41
42 3.4 RECYCLING DEMOLITION WASTE

43
44 A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

45 B. Concrete: break up and sort rebar as best as possible. Recycle all concrete.

46 C. Recycle all metal products from the building before demolition (aluminum, steel etc)

47 D. Recycle as much product as possible and provide a complete report to TCNJ to confirm the percentage
48 recycled on the project.

49
50 3.5 RECYCLING CONSTRUCTION WASTE

51
52 A. Packaging:

53
54 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

55 2. Polystyrene Packaging: Separate and bag materials.

- 1 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For
2 pallets that remain on-site, break down pallets into component wood pieces and comply with
3 requirements for recycling wood.
4 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling
5 wood.
6
7 B. Wood Materials:
8
9 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
10
11 3.6 DISPOSAL OF WASTE
12
13 A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials
14 from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having
15 jurisdiction.
16
17 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-
18 site.
19 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
20
21 B. Burning: Do not burn waste materials on site.
22
23 C. Burying: Do not bury waste materials on site.
24
25 D. Disposal: Transport waste materials off Owner's property and legally dispose of them.
26
27 E. Washing waste materials into sewers or drains is not permitted.
28
29 END OF SECTION 01524

TECHNICAL SPECIFICATIONS

ASBESTOS ABATEMENT (Non-Friable)

The College of New Jersey
Centennial Hall –Partial Air Conditioning
Ewing Township, New Jersey



Prepared for:

The College of New Jersey
2000 Pennington Road
Ewing, New Jersey 08614

Project No. TCNJX19001

December 13, 2019

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

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END OF SECTION

PROJECT DIRECTORY

PROJECT NAME: Asbestos Abatement
The College of New Jersey
Continental – Partial Air Conditioning

PROJECT LOCATION: The College of New Jersey
2083 Lawrenceville Road
Lawrenceville, New Jersey 08648

BUILDING OWNER: The College of New Jersey
2000 Pennington Road
Ewing Township, New Jersey 08618

Contact: Mark Kirchner
TCNJ – Environmental Programs
(609)771-3329

ASBESTOS MONITORING FIRM: Pennoni Associates, Inc.
515 Grove Street, Suite 1B
Haddon Heights, New Jersey 08035
ASCM License # 00102

Contact: Brian Clark
(856) 547-0505 Office
(856) 547-9174 Fax

DATE OF CONTRACT DOCUMENTS: December 13, 2019

SECTION 02913A

SUMMARY OF WORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 PROJECT/WORK IDENTIFICATION

- A. The Project name is Asbestos Abatement of Centennial Hall – Partial Air Conditioning.

Site locations are as follows:

The College of New Jersey
Centennial Hall
2000 Pennington Road
Ewing Township, New Jersey 08614

The contract documents related to Abatement have been prepared by the Owner's Environmental Consultant, Pennoni Associates Inc., and are dated December 13, 2019.

The base bid is lump sum for non-friable asbestos removal of floor tile/mastic in multiple locations as per these specifications. TCNJ is requesting an Alternate bid (#1 and #2) for the removal of additional asbestos-containing floor tile/mastic in additional rooms. In addition to floor tile/mastic removal, exterior asbestos plaster along the soffits of the building will also need to be removed. Floor and room locations and exterior soffits are detailed in the provided drawings and are labeled Base and Alt for reference. To clarify TCNJ is looking to have pricing for:

ACM Tile and Mastic Removal of 2 square feet per room and ACM Plaster from Exterior Soffits:

- Base Bid - 16 rooms, 2 square feet tile and mastic removal per room
Soffit - 4 locations (approximately 4 square feet per location)
- Alt #1 - 8 rooms, 2 square feet tile and mastic removal per room
Soffit - 2 locations (approximately 4 square feet per location)
- Alt #2 - 8 rooms, 2 square feet tile and mastic removal per room
Soffit - 2 locations (approximately 4 square feet per location)

The scope of the project includes the complete removal and proper off-site disposal of identified asbestos-containing floor tile and mastic in Centennial Hall in multiple rooms located on the TCNJ campus at 2000 Pennington Road, Ewing Township, New Jersey and as described in this specification and accompanying drawings in preparation for summer renovations. **All abatement activities shall be accomplished utilizing non-friable methods.** The Contractor shall remove selected floor tile and associated mastic (approximately 2 square feet per room) from marked areas in multiple rooms throughout the building as indicated on the drawings. The removal of mastic shall be conducted via no odor solvents utilizing hand-held deck brushes. The use of floor buffing machines for the removal of the mastic will not be permitted.

The areas for removal will be marked out prior to the commencement of on-site abatement activities.

The provided drawings indicate floor and room locations. Each area will have critical

barriers installed with negative pressure. Contractor is to have a manometer on-site to verify that negative pressure is being established. A one stage decon will be installed at the entrance of each work area. A remote decon area will be designated by TCNJ at the time of award.

Exterior soffits will need to have approximately 4 square feet removed to allow installation of conduit into the building. Areas will be marked prior to on-site removal. Exterior soffit removal locations are marked on drawings provided. Contractor will need to protect ground surfaces from falling debris. Contractor is to seal adjacent windows with poly prior to removal.

- B. Section 3.4 - Summary of Work, provides estimated quantities of asbestos-containing materials to be removed. The Contractor is responsible to determine exact quantities of asbestos-containing materials and scope of work as outlined in the specification and drawings prior to the submission of their bid. It is believed that less than or equal to 2 square feet per room will be removed. For soffits approximately 4 square feet per area will be removed.
- C. Contract Documents: Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:
 - 1. Applicable codes and regulations
 - 2. Notices and permits
 - 3. Existing site conditions and restrictions on use of the site
 - 4. Work performed prior to work under this Contract
 - 5. Alterations and coordination with existing work
 - 6. Work to be performed concurrently by the Owner
 - 7. Work to be performed concurrently by separate contractors
 - 8. Work to be performed subsequent to work under this Contract
 - 9. Alternates
 - 10. Allowances
- D. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, Drawings, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including but not necessarily limited to printed material referenced by any of these. Work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.
- E. General and Administrative Requirements are set forth in the following specification sections:
 - 1. 02913A SUMMARY OF THE WORK
 - 2. 02943 PROJECT COORDINATION
 - 3. 02991 DEFINITIONS AND STANDARDS
 - 4. 029301A SUBMITTALS
- F. Abatement Work requirements are set forth in the following specification sections, listed here according to the sequence of the work:
 - 1. 02992 CODES, REGULATIONS, AND STANDARDS - Sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to

- governmental agencies before start of work.
2. 029503A TEMPORARY FACILITIES - Sets forth the support facilities needed such as electrical and plumbing connections for the decontamination units and office space for the AST.
 3. 029526 TEMPORARY ENCLOSURES - Details the requirements for the sheet plastic barriers isolating the work area from the balance of the building.
 4. 029410 AIR MONITORING - Describes air monitoring by Owner's Environmental Consultant so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.
 5. 029513 TEMPORARY PRESSURE DIFFERENTIAL & AIR FILTRATION SYSTEM - Sets forth the procedures to set up the air filtration units and ventilation of the work area.
 6. 029560 WORKER PROTECTION - Sets forth the procedures and equipment for adequate worker protection.
 7. 029562 RESPIRATORY PROTECTION - Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.
- G. Asbestos Removal Work Procedures are described in the following specification sections:
1. 029981 REMOVAL OF ASBESTOS
 2. 029984 DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL.
- H. Decontamination of the Work Area after completion of abatement work is described in the following sections:
1. 029711 PROJECT DECONTAMINATION - Describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.
 2. 029714 WORK AREA CLEARANCE - Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

1.3 PROJECT COORDINATION

- A. The Asbestos Contractor shall coordinate all Asbestos Abatement work with the ENVIRONMENTAL CONSULTANT in accordance with Section 02943 – Project Coordination.
- B. The Asbestos Contractor shall not perform any work in the absence of the Environmental Consultant's Industrial Hygienist, who shall decide in his absolute discretion as to the meaning and applicability of any part of the Asbestos Abatement Specification.

1.4 INSPECTION

- A. Prior to commencement of work, the Contractor shall inspect areas in which work will be performed. Prepare a listing of damages to structure, surfaces, equipment or surrounding properties, which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary, to document conditions. Submit to Environmental Consultant prior to starting work.

1.5 POTENTIAL ASBESTOS HAZARD

- A. The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workers and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the jobsite of the seriousness of the hazard and of proper work procedures, which must be followed.

- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos-containing materials, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.6 STOP WORK

- A. If the Owner or ENVIRONMENTAL CONSULTANT presents a written stop work order, immediately and automatically stop all work. Do not recommence work until authorized in writing by ENVIRONMENTAL CONSULTANT.

1.7 ASBESTOS-CONTAINING MATERIALS

- A. The following asbestos-containing materials are to be removed as part of this scope of work. If any other materials are found, which are suspected of containing asbestos (i.e. floor tile, pipe insulation, pipe fittings, etc.), notify the Environmental Consultant immediately both verbally and in writing. Do not proceed with any additional work without written approval. Summary tables of materials, estimated quantities and locations of asbestos materials to be removed is also included under 3.4 of this Section.

1. 9x9 floor tile and associated mastic

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 OWNER OCCUPANCY

- A. The buildings **will be occupied** during abatement activities. Cooperate fully with other personnel that may be working at the site. Perform all work so as not to interfere with other personnel.
- B. All Asbestos Abatement work shall be performed in accordance with these specifications, and all federal, state and local regulations, as applicable.

3.2 CONTRACTOR USE OF PREMISES:

- A. Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.
 1. Keep existing driveways and entrances serving the premises clear and available to the Owner at all times. Do not use these areas for parking or storage of materials.
 2. Do not unreasonably encumber the site with materials or equipment.
 3. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.
- B. Contractor's Use of the Existing Building(s): Maintain existing building(s) in a safe and weather tight condition throughout the construction period.
 1. Smoking or open fires will not be permitted within the building.
 2. Keep means of egress clear of rubbish, construction materials and asbestos waste.

3. The use of existing toilets within the building will be allowed at the Owner's discretion.

3.3 WORK TO BE PERFORMED BY OTHERS:

- A. The Owner will coordinate with the Contractor to facilitate shut down, blanking off and lockout of all HVAC, electrical, mechanical and security equipment and systems located within and/or servicing the work area(s) as feasible.

3.4 SUMMARY OF WORK

- A. The scope of the Project includes the complete removal and off-site disposal of certain identified asbestos-containing materials. The asbestos-containing materials are summarized in the following summary tables and on the attached drawings. The tables are provided to supply Contractors with information to aid in the bidding process. The tables shall in no way limit the scope of work. The Contractor shall be responsible to fully investigate the scope of work and provide a bid proposal based on all existing conditions.

Work Areas

See attached drawings that mark out Base Bid and Alternate Bid

- B. The Contractor shall:
 1. Make all required notifications, obtain all permits and pay all fees associated with the work.
 2. Remove all identified asbestos-containing materials in strict accordance with all applicable federal, state and local regulations and this specification.
 3. Dispose of all asbestos-containing materials in strict accordance with N.J.D.E.P. rules and regulations, N.J.A.C. 7:26, and this specification.
 4. Coordinate with the Facilities Manager for the shutdown, blanking off and lockout all HVAC, electrical, mechanical and security equipment and systems located within and/or servicing the work area locations where feasible.
 5. Provide personnel and waste decontamination facilities where indicated on the contract drawings. The Contractor shall be responsible to make all connections and disconnections to existing electrical panels and water sources. The Contractor shall provide the necessary equipment to supply the decontamination unit with hot water.
 6. Vent all HEPA-equipped air filtration units to the exterior of the building or as indicated on the Contract Drawings. The Contractor shall remove doors and/or windows as required and construct plywood manifold systems to allow for exhaust ducts to run to the building exterior.
 7. Install scaffolding as necessary to access the work.
 8. Remove and dispose of asbestos-containing materials as indicated on the Contract Drawings and described herein.
 9. Clean and decontaminate the work areas as per this specification.
 10. Contractor to remove boiler and hot water heater from site.
 11. Route all waste directly to the secured dumpster/truck.
 12. Coordinate the location of dumpsters with the ENVIRONMENTAL CONSULTANT. All asbestos dumpsters shall be the enclosed lockable type and shall be kept locked when left unattended.
 13. The Contractor shall be required to achieve the post abatement, air monitoring clearance criteria as specified in Section 029714, Work Area Clearance.

3.5 SCHEDULE

The following schedule shall govern work of this contract:

Schedules to be determined during pre-bid meeting.

END OF SECTION

SECTION 02943

PROJECT COORDINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY:

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
 1. Notifications.
 2. Permits and Fees.
 3. Administrative and supervisory personnel.
 4. Pre-Construction meeting.
 5. Progress Meetings.
 6. Documentation required at work site.
 7. Coordination of Subcontractors and other trades.
 8. Requirements for the Contractor's Construction Schedule are included in Section "Submittals".

1.3 NOTIFICATIONS:

- I. The Contractor shall make all required notifications associated with his contract to include, but not limited to those listed in Section 01902 Codes, Regulations and Standards.

1.4 PERMITS AND FEES:

- A. The Contractor shall obtain all required Permits, and pay all fees associated with his contract to include, but not limited to those listed in Section 02992 Codes, Regulations and Standards.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

- A. General Superintendent: Provide on a twenty-four hour a day on call basis, a General Superintendent who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 C.F.R. 1926 for the Contractor and is the Contractor's Representative's responsible for compliance with all applicable Federal, State, and Local Regulations, and this specification. This person shall have completed a course at an E.P.A. Training Center or an equivalent certified course in asbestos abatement procedures and have had a minimum of three years of on-the-job training and meet any additional requirements set forth in 29 C.F.R. 1926 for a Competent Person and this specification. The responsibilities of the General Superintendent shall include but not be limited to the following:
 1. The General Superintendent shall submit special reports directly to the Owner within one day of occurrence. A copy shall be submitted to the Owner's Representative, Project Consultants, and others affected by the occurrence.
 2. When an event of unusual and significant nature occurs at the site (e.g. failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of

results or effects, and similar pertinent information. When such events are known or predictable in advance, advise the Owner in advance at the earliest possible date.

- B. Project Supervisor: Provide a full-time Project Supervisor who is certified and fully knowledgeable in the use of equipment and situations unique to that worksite. A separate individual shall be required to fulfill this function for each work shift that exceeds ten hours within any twenty-four-hour period. The responsibilities of the Project Supervisor shall include but not be limited to the following:
1. Ensure that the individuals are wearing all proper personal protective equipment as outlined in Sections 029560 - 029562 of this specification and are trained in their use.
 2. Ensure that precautions have been taken to prevent heat stress and other emergencies from occurring (e.g. selecting light-weight protective clothing, reducing the work rate, and providing adequate fluid breaks).

1.6 PRE-CONSTRUCTION MEETING:

- A. The Contractor shall attend pre-construction meeting(s) scheduled by the ENVIRONMENTAL CONSULTANT. These meetings shall be attended by the Owner and/or the Owner's Representative, and the Contractor's OSHA Monitoring Firm. At this meeting, the Contractor shall present in detail the following:
1. A detailed plan for preparation of each work area.
 2. Description of protective clothing and approved respirators (by NIOSH and the Project Consultants) to be used.
 3. Delineation of responsibility of work site isolation.
 4. Explanation of the decontamination sequence.
 5. Description of all removal methods to be used.
 6. Explanation of the handling of asbestos-contaminated waste.
 7. Proof of workers' medical exams substantiated by reports signed by the physician.
 8. Description of the final clean up procedures to be used.
 9. Proposed waste disposal site and proof of transporter registration. If a change in either of these items occurs during the course of the project, the Contractor shall notify the ENVIRONMENTAL CONSULTANT.
 10. A sample of the waiver form to be used for all authorized visitors to the site.
 11. Explanation of air filtration systems to be used for personnel protection, building protection, and environmental protection.
 12. List of equipment on hand or to be obtained, how to be used, and the operation of each to include impact on the personnel, building environmental, and work environment.
 13. Plan of action in the event of an emergency (Asbestos Spill Plan, fire routes, etc.).
 14. A Detailed Work Schedule, with start and completion dates for all phases of asbestos abatement, to include, but not limited to, Worksite Preparation, Pre-inspection, Removal, Clean-up, Pre-encapsulation Inspection, Encapsulation, Clean-up Inspection, Final Cleaning, Disposal, Final Inspection, Post-testing, Analysis and Post State Inspection.
- B. The Quality Assurance Air Monitoring Firm shall present in detail an explanation of air monitoring procedures to be used on behalf of the Owner. The Contractor (or independent air monitoring laboratory employed on his behalf) shall present in detail how compliance with OSHA monitoring requirements shall be fulfilled.

- C. Asbestos work shall not proceed until the Owner, ENVIRONMENTAL CONSULTANT, and the Contractor agree on the details listed in this article.

1.7 PROGRESS MEETINGS:

- A. The Contractor shall attend prescheduled Progress Meetings. These shall be scheduled by the ENVIRONMENTAL CONSULTANT. These meetings shall also be attended by Owner's Representative and the ENVIRONMENTAL CONSULTANT. Any such meetings shall serve to update all items discussed in the Pre-Construction meeting.

1.8 DOCUMENTATION REQUIRED AT WORK SITE:

- A. One copy of each regulation cited in Section 02992 shall be available in the Contractor's business office and one copy of each shall be maintained in view at the job site.
- B. The Contractor shall display copies of the required letters of Notification, Permits, and Variances.
- C. Additional documentation required of the Contractor and to be available at the job site shall include:
 - 1. List of emergency telephone numbers to include:
 - a. The ENVIRONMENTAL CONSULTANT and Industrial Hygienist.
 - b. E.P.A.
 - c. O.S.H.A.
 - d. D.E.P.
 - e. D.O.H.
 - f. Fire Department.
 - g. Police Department.
 - h. Local Hospital.
 - i. Emergency Squad.
 - j. DCA Asbestos Safety Unit.
 - k. Contractors Project Supervisor and General Superintendent.
 - 2. The Contractor shall establish written work area emergency procedures and shall have such procedures posted in view and also inside each work area. In case of an emergency, decontamination procedures shall not impede emergency procedures.
 - 3. List or personnel including all new employees.
 - 4. A Daily Log of all persons entering the work area, including all visitors. The Log shall include the full name and certification number of all employees, and the time when they enter and exit the work area. Non-employees of the Asbestos Contractor shall be required to sign an acceptable waiver form. The waiver form shall be approved by the ENVIRONMENTAL CONSULTANT.
 - 5. The Daily Log shall include a record of start and stop times, any work area problems encountered, any corrective action, and estimated amount of asbestos waste generated.
 - 6. The Contractor shall be responsible for obtaining a copy of the daily monitoring logs from their air testing firm and maintaining this with the Daily Log at the job site.
 - 7. Copies of Daily Log forms shall be given to the ENVIRONMENTAL CONSULTANT at the end of each week's work.
- D. Work schedules and updated progress charts depicting all phases of work and completion deadlines.

- E. Copy of Waste Hauler's Certificate and copy of all landfill receipts.

1.9 COORDINATION OF SUBCONTRACTORS AND OTHER TRADES:

- A. The Contractor shall work in complete cooperation and coordination with any Subcontractors or any other trades that may be involved in other work within or related to the site.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 02991

DEFINITIONS AND STANDARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in Contract Documents are defined in this article.
- B. General Requirements: The provisions or requirements of Division-1 sections apply to entire work of Contract and, where so indicated, to other elements which are included in project.

1.3 GENERAL DEFINITIONS:

- A. Definitions contained in this Article are not necessarily complete but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.
 - 1. Building Owner: The person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance the Building Owner means the person in whom beneficial title is vested.
 - 2. Contractor: A public authority or any other governmental agency or instrumentality thereof, self-employed person, company, unincorporated association, firm, partnership, or corporation and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.
 - 3. Indicated: This term refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.
 - 4. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Owner Representative", "requested by the Owner's Representative", and similar phrases. However, no implied meaning shall be interpreted to extend the Owner's Representative's responsibility into the Contractor's area of construction supervision.
 - 5. Approve: The term "approved," where used in conjunction with the Owner Representative's action on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in General and Supplementary Conditions. Such approval shall not release the Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.
 - 6. Regulation: The term "Regulations" includes laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.
 - 7. Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations.

8. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations."
9. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
10. Installer: An "Installer" is an entity engaged by the Contractor, either as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
11. The term "experienced," when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this project, and familiar with the precautions required, and has complied with requirements of the authority having jurisdiction.
12. Project Site is the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project. The extent of the project site is shown on the Drawings.
13. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.
14. Owner's Representative: This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during construction and until final payment is due. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.
15. Project Administrator: This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Administrator is a full time representative of the Owner at the job site with authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgement of the Project Administrator, Owner's Representative, Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.
16. General Superintendent: This is the Contractor's Representative at the work site. This person will generally be the Competent Person required by OSHA in 29 CFR 1926.

1.4 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT:

A. Definitions:

1. Abatement: Any and all procedures physically taken to control fiber release from asbestos-containing materials. This includes removal, encapsulation, enclosure and repair.
2. Abatement Activities: All activities from the initiation of work area preparation through successful clearance air monitoring performed at the conclusion of an asbestos project.
3. Accredited or Accreditation (when referring to a person or laboratory): A person or laboratory accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (TSCA).
4. Action Level: An airborne concentration of asbestos of 0.1 fibers per cubic centimeter (f/cc) of air calculated as an eight-hour time-weighted average.
5. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

6. Aggressive Sampling: A method of sampling in which the individual collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.
7. Airlock: A system for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least four feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.
8. Air Cell: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.
9. Air Monitoring: The process of measuring the fiber content of a specific volume of air.
10. Air Sampling: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400, or the provisional transmission electron microscopy methods developed by the USEPA which are utilized for lower detectability and specific fiber identification.
11. Ambient Air Monitoring: Measurement or determination of airborne asbestos fiber concentrations outside but in the general vicinity of the worksite.
12. Amended Water: Water to which a surfactant has been added to decrease the surface tension to 35 or less dynes.
13. Approved Safety and Health Program: A Program certified by the Commissioner providing training in the handling and use of asbestos-containing material, and safety and health risks inherent in such handling and use, together with methods for minimizing the exposure of workers and the public to asbestos fibers, and instruction in all applicable federal, state and local laws and regulations pertaining to asbestos-related work.
14. Area Air Sampling: Any form of air sampling or monitoring where the sampling device is placed at some stationary location.
15. Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
16. Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.
17. Asbestos-Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.
18. Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.
19. Asbestos-Contaminated Objects: Any objects which have been contaminated by asbestos or asbestos-containing material.
20. Asbestos debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.
21. Asbestos Handler: An individual who disturbs, removes, encapsulates, repairs, or encloses friable asbestos material. This individual shall have completed an approved training course and be fully certified.
22. Asbestos Handler Supervisor: An individual who supervises the handlers during an asbestos

- project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to. This individual shall have completed approved training courses and be fully certified.
23. Asbestos Inspection Report: A report on the condition of a building or structure in relation to the presence and condition of asbestos therein.
 24. Asbestos investigator: A certified individual having satisfactorily demonstrated his or her ability to identify the presence and evaluate the condition of asbestos in a building or structure.
 25. Asbestos Removal Plan: A plan which will be undertaken so as to prevent asbestos from becoming airborne in the course of the alteration, renovation, modification or demolition of any building or structure.
 26. Asbestos Spill Plan: This is to be implemented immediately in the event of failure. This includes, but is not limited to, a HEPA vacuum, extra trash bags, mops, sponges, buckets, etc., for rapid cleanup.
 27. Authorized Visitor: The Owner, the Owner's Representative, testing lab personnel, the Architect/Engineer, emergency personnel or a representative of any federal, state and local regulatory or other agency having authority over the project.
 28. Barrier: Any surface that seals off the work area to inhibit the movement of fibers.
 29. Baseline Monitoring: A measurement or determination of airborne asbestos fiber concentrations inside the work area and outside the building prior to starting the abatement activities.
 30. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.
 31. Calibration: The determination within specific limits of the true value of the scale reading or indication of an instrument.
 32. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.
 33. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.
 34. Certified Safety Person (C.S.P): An individual having a bachelor's degree from an accredited college or university and a minimum of four years of experience as a safety professional and who has successfully completed both levels of the examination administered by the Board of Certified Safety Professionals and who is currently certified.
 35. Clean room: An uncontaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and protective equipment.
 36. Clearance Air Monitoring: The employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers, and shall be performed as the final abatement activity.
 37. Containment: An area which has been sealed with polyethylene sheeting to prevent contamination of asbestos to the outside environment.
 38. Controlled Area: An area which can be separated off from occupied areas of the building for the purpose of controlling fiber release to the occupied areas of the building. This area is controlled so as to limit access and to ensure that, when accessed, all appropriate health and safety protocols are utilized.
 39. Curtained Doorway: A device which consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached at the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

40. Decontamination Unit: A serial arrangement of rooms or spaces for the purpose of separating the work area from the building environment upon entering the work area and for the cleaning of persons, equipment, and contained waste prior to returning to the clean environment.
41. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
42. Disposal Bag: A properly labeled 6 mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site.
43. Disturb: Any action taken which may alter, change, or stir, such as but not limited to the removal, encapsulation, enclosure or repair of asbestos-containing material.
44. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.
 - a. Bridging encapsulant: an encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.
 - b. Penetrating encapsulant: an encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.
 - c. Removal encapsulant: a penetrating encapsulant specifically designed to minimize fiber release during removal of asbestos-containing materials rather than for in situ encapsulation.
45. Encapsulation: Treatment of asbestos-containing materials, with an encapsulant.
46. Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.
47. Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.
48. Fiber: An acicular single crystal or a similarly elongated polycrystalline aggregate which displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation, and others, and which has attained its shape primarily through growth rather than cleavage.
49. Fiber Count: Average number of fibers in a cubic centimeter of air (f/cc).
50. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.
51. Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area.
52. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.
53. Friable Asbestos Material: Material that contains more than 1.0% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
54. Friable Material Containment: The encapsulation or enclosure of any friable ACM in a facility.
55. Glovebag: A sack (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic) with inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.
56. HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in diameter.
57. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.
58. High-efficiency particulate air filter (HEPA): Refers to a filtering system capable of trapping and retaining 99.97 percent of all mono-dispersed particles 0.3 um in diameter or larger.

59. High Volume Sampling Pump: An instrument used to draw ambient air over a filter at a flow rate between ten (10) and thirty (30) liters per minute. The high volume sampling pumps are generally utilized for background or baseline samples, environmental samples, decontamination unit samples, and post-abatement samples.
60. Holding Area: A small chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.
61. Homogeneous Work Area: A portion of the work area which contains one type of asbestos-containing material and/or where one type of abatement is used.
62. Incidental Exposure: Occupational exposure to asbestos fibers caused to oneself by disturbing ACM during the performance of one's job, except during the performance of an asbestos project or minor project.
63. Industrial Hygiene: That science and art devoted to the recognition, evaluation and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well being, or significant discomfort and inefficiency among workers or among the citizens of the community.
64. Industrial Hygienist: An individual having a college or university degree or degrees in Engineering, Chemistry, Physics, or Medicine or related Biological Sciences who, by virtue of special studies and training must have been sufficient in all of the above cognate sciences to provide the following abilities:
 - a. To recognize the environmental factors and to understand their effect on people and their well being.
 - b. To evaluate, on the basis of experience and with the aid of quantitative measurement techniques, the magnitude of these stresses in terms of ability to impair people's health and well being.
 - c. To prescribe methods to eliminate, control or reduce such stresses when necessary to alleviate their effects.
65. Isolation Barrier: The construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the work place from surrounding areas to contain asbestos fibers in the work area.
66. Large Asbestos Project: The removal, enclosure, or encapsulation within one year of 160 square feet or more of asbestos-containing material used on an equipment, wall, or ceiling area; or involves the removal or encapsulation, using a liquid material applied by a pressurized spray, within one year of 260 linear feet or more of asbestos-containing material on covered piping.
67. Log: An official record of all activities that occurred during the project and it shall identify the Building Owner, Agent, Contractor, and Workers, and other pertinent information (e.g., equipment malfunctions, contamination beyond the work area, etc.).
68. Low Volume Sampling Pump: An instrument used to collect air samples at rates ranging from one (1) to three (3) liters per minute. The low volume sampling pump, also known as the personal sampling pump, is essentially utilized for personal samples and work area samples.
69. Minor Asbestos Project: Corrective action using recommended work practices to minimize the likelihood of fiber release from damaged areas of asbestos ceilings, pipe and boiler insulation which involves the removal, repair, encapsulation or enclosure of 25 square feet or less of asbestos-containing material used on an equipment, wall or ceiling area, or involves the removal or encapsulation, using a liquid material applied by a pressurized spray, of 10 linear feet or less of asbestos-containing material on covered piping within one year from the start of the initial abatement work. The repair, enclosure and encapsulation by methods other than pressurized spray of any amount of asbestos-containing material, used to cover piping, shall also be a minor asbestos hazard abatement project.
70. Movable Object: A unit of equipment or furniture in the work area which can be removed from the work area.

71. Negative Air Pressure Equipment: A portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the work area.
72. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
73. Negative Pressure Ventilation System: A pressure differential and ventilation system.
74. Occupied Area: An area of the worksite where abatement is not taking place and where personnel or occupants normally function or where workers are not required to use personal protective equipment.
75. Outside Air: The air outside the work place.
76. Permissible Exposure Limit: The permitted exposure to a particular concentration of a substance as specified by OSHA. The current permissible exposure limit for asbestos is 0.1 f/cc for an eight-hour (8) time-weighted average.
77. Personal Air Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.
78. Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, head gear and approved respiratory protection.
79. Plasticize: To cover walls and floors with plastic sheeting as herein specified or by using approved spray plastics.
80. Pressure Differential and Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the Work Area at a lower pressure than any adjacent area, and which cleans re-circulated air or generates a constant air flow from adjacent areas into the Work Area.
81. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
82. Qualitative Fit Test: The individual test subject's responding (either voluntarily or involuntarily) to a chemical challenge outside the respirator facepiece. Three of the most popular methods include:
 - a. Irritant smoke test.
 - b. Odorous vapor test.
 - c. Taste test.
83. Quantitative Fit Test: Exposing the respirator wearer to a test atmosphere containing an easily detectable, nontoxic aerosol, vapor or gas as the test agent. Instrumentation, which samples the test atmosphere and the air inside the facepiece of the respirator, is used to measure quantitatively the leakage into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the tests.
84. Removal: The stripping of any asbestos-containing materials from surfaces or components of a facility or taking out structural components in accordance with 40 CFR 61 Subparts A and M.
85. Replacement Material: Any material used to replace ACM that contains less than .01% asbestos by weight.
86. Repair: Returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.
87. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

88. Shift: A worker's, or simultaneous group of worker's, complete daily term of work.
89. Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.
90. Small Asbestos Project: The removal, enclosure or encapsulation within one year of more than 25 and less than 160 square feet of asbestos-containing material used on an equipment, wall or ceiling area; or involves the removal or encapsulation, using a liquid material applied by a pressurized spray within one year of more than 10 and less than 260 linear feet of asbestos-containing material on covered piping.
91. Staging Area: The work area near the Waste Decontamination Chamber where containerized asbestos waste has been placed prior to removal from work area.
92. Strip: To remove friable Asbestos materials from any part of the facility.
93. Structural Member: Any load-supporting member of a facility, such as beams and load-supporting walls, or any non-load supporting member, such as ceiling and non-load supporting walls.
94. Surface Barriers: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.
95. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
96. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.
97. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
98. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.
99. Wet Methods: The use of amended water or removal encapsulants to minimize the generation of fibers during ACM disturbance.
100. Work Area: The area where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.
101. Worker: Certified asbestos handler and/or asbestos handler supervisor.
102. Work Place: The work area and the decontamination enclosure system(s).
103. Work Site: Premises where asbestos abatement activity is taking place, and may be composed of one or more work areas.

1.5 SPECIFICATION FORMAT AND CONTENT EXPLANATION:

- A. This Article is provided to help the user of these Specifications understand the format, language, implied requirements, and similar conventions. None of the explanations shall be interpreted to modify the substance of Contract requirements.
- B. Specification Format: These Specifications are organized into Divisions, Sections or Trade Headings based on the Construction Specifications Institute's 16-Division format and the MASTERFORMAT numbering system. This organization conforms generally to recognized construction industry practice.

- C. **Specification Content:** This Specification has been produced employing conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
1. Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
 2. Imperative Language is used generally in the Specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted.
- D. **Assignment of Specialists:** The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and the assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
1. This requirement should not be interpreted to conflict with enforcement of building codes or regulations governing the work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
- E. **Trades:** Use of titles such as "carpentry" is not intended to 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 tradespersons of the corresponding generic name.

1.6 DRAWING SYMBOLS:

- A. Graphic symbols used on the Drawings are those recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., seventh edition.
- B. **Mechanical/Electrical Drawings:** Graphic symbols used on mechanical and electrical Drawings are generally aligned with symbols recommended by ASHRAE. Where appropriate, they are supplemented by more specific symbols recommended by technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Owner's Representative for clarification before proceeding.

1.7 INDUSTRY STANDARDS:

- A. **Applicability of Standards:** Except where Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.
1. Referenced industry standards take precedence over standards that are not referenced but recognized in the construction industry as applicable.
 2. Unreferenced industry standards are not directly applicable to the work, except as a general requirement of whether the work complies with recognized construction industry standards.
- B. **Publication Dates:** Where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

- C. Updated Standards: At the request of the Owner's Representative, Contractor or authority having jurisdiction, submit a Change Order proposal where applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The Owner's Representative will decide whether to issue a Change Order to proceed with the updated standard.
- D. Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner's Representative for a decision before proceeding.
- E. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Owner's Representative for decision before proceeding.
- F. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
 2. Although copies of standards needed for enforcement of requirements may be part of required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.
- G. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of Contract Documents:
1. AIHA - American Industrial Hygiene Association 475 Wolf Ledges Parkway Akron, OH 44311 216/762-7294.
 2. AIA - American Institute of Architects 1735 New York Ave. NW Washington, DC 20006 202/626-7474.
 3. ANSI - American National Standards Institute 1430 Broadway New York, NY 10018 212/354-3300.
 4. ASHRAE - American Society for Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle NE Atlanta, GA 30329 404/636-8400.
 5. ASME - American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017 212/705-7722.
 6. ASPE - American Society of Plumbing Engineers 3716 Thousand Oaks Boulevard, Suite 210, Westlake, CA 91362 805/495-7120.
 7. ASTM - American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103 215/299-5400.
 8. AWCI - Association of the Wall and Ceiling Industries- International 25 K Street, NW Washington, DC 20002 202/783-2924.

9. CFR - Code of Federal Regulations Available from Government Printing Office; Washington, DC 20402 (usually first published in Federal Register) 202/783-3238.
 10. CGA - Compressed Gas Association 1235 Jefferson Davis Highway Arlington, VA 22202 703/979-0900.
 11. CS - Commercial Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, DC 20402 202/377-2000.
 12. DOT - Department of Transportation 400 Seventh St., SW Washington, DC 20590 202/426-4000.
 13. EPA - Environmental Protection Agency 401 M St., SW Washington, DC 20460 202/382-3949.
 14. FS - Federal Specification (General Services Admin.) Obtain from your Regional GSA Office, or purchase from GSA Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406 202/472-2205 or 2140.
 15. GA - Gypsum Association 1603 Orrington Ave. Evanston; IL 60201 312/491-1744.
 16. GSA - General Services Administration F St. and 18th St., NW Washington, DC 20405 202/655-4000.
 17. IEEE - Institute of Electrical and Electronic Engineers 345 E. 47th Street New York, NY 10017 212/705-7900.
 18. MIL - Military Standardization Documents (U.S. Dept. of Defense) Naval Publications and Forms Center, 5801 Tabor Ave. Philadelphia, PA 19120.
 19. MSHA - Mine Safety and Health Administration, Approval and Certification Center, P.O. Box 251, Route 1, Triadelphia, WV 26059.
 20. NBS - National Bureau of Standards (U.S. Dept. of Commerce) Gaithersburg, MD 20234 301/921-1000.
 21. NEC - National Electrical Code (by NFPA).
 22. NESHAP - National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
 23. NIOSH - National Institute for Occupational Safety and Health CDC - NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226
 24. NFPA - National Fire Protection Association Batterymarch Park Quincy, MA 02269 617/770-3000.
 25. NRCA - National Roofing Contractors Association 6250 River Road Rosemont, IL 60018 312/318-6722.
 26. OSHA - Occupational Safety & Health Administration (U.S. Dept. of Labor) Government Printing Office Washington, DC 20402 202/783-3238.
 27. PS - Product Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, DC 20402 202/783-3238.
 28. RFCI - Resilient Floor Coverings Institute 966 Hungerford Drive, Suite 12-B Rockville, MD 20805 301/340-8580.
 29. UL - Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062 312/272-8800.
- H. Trade Union Jurisdictions: The Contractor shall maintain, and require subcontractors to maintain, complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The manner in which Contract Documents have been organized and subdivided is not intended to indicate trade union or jurisdictional agreements.
1. Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.
 2. Assign and subcontract construction activities, and employ tradesmen and laborers in a

manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

1.8 SUBMITTALS:

- A. Permits, Licenses and Certificates: 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 (Not Applicable)

END OF SECTION

SECTION 02992

CODES, REGULATIONS, AND STANDARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY:

- A. This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.
 - 1. Requirements include adherence to all work practices and procedures set forth in applicable codes, regulations and standards and this specification.
 - 2. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS:

- A. General Applicability of Codes and Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.
- C. Federal Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
- D. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:
 - 1. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1910, Section 1001 and Part 1926, Section 58 of the Code of Federal Regulations
 - 2. Respiratory Protection Title 29, Part 1910, Section 134 of the Code of Federal Regulations
 - 3. Construction Industry Title 29, Part 1926, of the Code of Federal Regulations
 - 4. Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations
 - 5. Hazard Communication Title 29, Part 1910, Section 1200 of the Code of Federal Regulations
 - 6. Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations

- E. DOT: U. S. Department of Transportation, including but not limited to:
 - 1. Hazardous Substances Title 29, Part 171 and 172 of the Code of Federal Regulations
- F. EPA: U. S. Environmental Protection Agency (EPA), including but not limited to:
 - 1. Asbestos Abatement Projects; Worker Protection Rule Title 40 Part 763, Sub-part G of the Code of Federal Regulations
 - 2. Asbestos Hazard Emergency Response Act (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E of the Code of Federal Regulations
 - 3. Training Requirements of (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations.
 - 4. National Emission Standards for Hazardous Air Pollutants (NESHAP) National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations
- G. State Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
 - 1. Uniform Construction Code Act. (New Jersey S.A. 52-17D-119 et. seq., P.L. 1984)
 - 2. Asbestos Control and Licensing Act. (NJSA 34:5A-32 et. seq., P.L. 1984)
 - 3. Asbestos Hazard Abatement Subcode for Educational Facilities - Subchapter 8. N.J.A.C. 5:23-8 New Jersey Department of Community Affairs Division of Housing and Development Bureau of Construction Code Enforcement CN 805 Trenton, New Jersey 08625-0805
 - 4. Asbestos Licenses and Permits N.J.A.C. 12:120-1,2,3,4,5,7 and 8:60-1,2,3,4,5,7 New Jersey Department of Labor Division of Workplace Standards CN 504 Trenton, New Jersey 08625-0504
 - 5. Asbestos Training Courses N.J.A.C. 8:60-2 and 6, and 12:120-2 and 6 New Jersey Department of Health Asbestos Control Project, Training Unit CN 360 Trenton, NJ 08625-0360
 - 6. Solid Waste Management Act. (NJSA 13:1E-1, 13:109,et.seq.,as amended)
 - 7. Disposal Regulations N.J.A.C. 7:26 New Jersey Department of Environmental Protection Division of Waste Management Bureau of Field Operations CN 028 Trenton, NJ 08625-0805
 - 8. Control and Prohibition of Air Pollution by Toxic Substances, New Jersey Department of Environmental Protection, New Jersey Administrative Code. Title 7, Chapter 27, Subchapter 17, effective date: December 17, 1979.
 - 9. Asbestos Subchapter of the New Jersey Safety and Health Standards for Public Employees, NJAC 12:100 et. seq.
- H. Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.4 STANDARDS:

- A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of

workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his subcontractors.

- C. Standards: which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
1. American National Standards Institute (ANSI) 1430 Broadway New York, New York 10018 (212)354-3300E
 - a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79
 - b. Practices for Respiratory Protection Publication Z88.2-80
 2. American Society for Testing and Materials (ASTM) 100 Bar Harbor Drive, Conshohocken, PA 19428 (610)832-9585
 - a. Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82

1.5 EPA GUIDANCE DOCUMENTS: discuss asbestos abatement work or hauling and disposal of asbestos waste materials listed below for the Contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800) 334-8571, publications can be ordered from (800) 424-9065 (554-1404 in Washington, DC):

- A. Asbestos-Containing Materials in School Buildings - A Guidance Document. Part 1 & 2. (Orange Books) EPA C00090 (out of print)
- B. Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book) EPA 560/5-85-024
- C. Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763)
- D. Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule. EPA 560/5-84-005
- E. Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials. EPA 560/5-84-006
- F. Asbestos in Buildings: Guidance for Service and Maintenance Personnel. EPA 560/5-85-018
- G. Asbestos Waste Management Guidance. EPA 530-SW-85-007
- H. Asbestos Fact Book. EPA Office of Public Affairs. Asbestos in Buildings. Simplified Sampling Scheme for Friable Surfacing Materials
- I. Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification
- J. A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA-560-OPTS-86-001

1.6 NOTICES:

- A. U.S. ENVIRONMENTAL PROTECTION AGENCY
 1. Send Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) to the regional Asbestos NESHAP Contact at least 10 days prior to beginning any work on

asbestos-containing materials. Send notification to the following address:

- a. REGION 2: Asbestos NESHAP Contact, Division of Enforcement & Compliance Assistance, Asbestos Removal – 21st Floor, 290 Broadway, New York, NY 10007.
2. Notification: Include the following information in the notification sent to the NESHAP contact:
 - a. Name and address of owner or operator.
 - b. Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.
 - c. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components. For facilities in which the amount of friable asbestos materials is less than 260 linear feet on pipes and less than 160 square feet on other facility components, explain techniques of estimation.
 - d. Location of the facility being demolished or renovated.
 - e. Scheduled starting and completion dates of demolition or renovation.
 - f. Nature of planned demolition or renovation and method(s) to be used.
 - g. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61 Subpart M).
 - h. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.
 - i. For facilities being demolished under an order of a State or local governmental agency, issued because the facility is structurally unsound and in danger of imminent collapse, the name, title, and authority of the State or local governmental representative who has ordered the demolition.

B. STATE AND LOCAL AGENCIES:

1. Send written notification as required by state and local regulations prior to beginning any work on asbestos-containing materials.

1.7 PERMITS:

- A. The Contractor shall obtain all required Permits, and pay all Fees associated with his contract.
- B. All asbestos containing waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" specifically for asbestos-containing materials, as required for transporting of waste asbestos-containing materials to a disposal site.

1.8 LICENSES:

- A. Licenses: Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.9 POSTING AND FILING OF REGULATIONS:

- A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulation and standard. Maintain one copy of each at job site. Keep on file in Contractor's office one copy of each.

1.10 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. No work shall begin until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
- B. Permits, Licenses, and Certificates: 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 including:
 - 1. State and Local Regulations: Submit copies of codes and regulations applicable to the work.
 - 2. Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.
 - 3. Permits: Submit copies of current valid permits required by state and local regulations.
 - 4. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 029301A

SUBMITTALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Section 01300.

END OF SECTION

SECTION 029410

AIR MONITORING

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.
- C. Air Monitoring: Work area clearance is described in Section 029714 Work Area Clearance.

1.2 DESCRIPTION OF THE WORK:

- A. Not in Contract Sum: This section describes work being performed by the ENVIRONMENTAL CONSULTANT. This work is not in the Contract Sum.
- B. This section describes air monitoring carried out by the ENVIRONMENTAL CONSULTANT to verify that the building beyond the work area and the outside environment remains uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.
- C. Air monitoring required by OSHA is work of the Contractor and is not covered in this Section. The Abatement Contractor is responsible for providing daily OSHA compliance monitoring as per 29 C.F.R. 1926.1101. OSHA monitoring shall be included in the Asbestos Contractor's Contract Sum.

1.3 AIR MONITORING:

- A. Work Area Isolation: The purpose of the ENVIRONMENTAL CONSULTANT's air monitoring is to detect faults in the work area isolation such as:
 - 1. Contamination of the building outside of the work area with airborne asbestos fibers.
 - 2. Failure of filtration or rupture in the differential pressure system.
 - 3. Contamination of air outside the building envelope with airborne asbestos fibers.
- B. Should any of the above occur, immediately cease asbestos abatement activities until the fault has been corrected. Do not recommence work until authorized by the ENVIRONMENTAL CONSULTANT.

1.4 WORK AREA AIRBORNE FIBER COUNT:

- A. The ENVIRONMENTAL CONSULTANT will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne asbestos concentrations which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

1.5 WORK AREA CLEARANCE:

- A. To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the ENVIRONMENTAL CONSULTANT will sample and analyze air per Section 029714 Work Area Clearance.
- B. The ENVIRONMENTAL CONSULTANT will be conducting air monitoring throughout the course of the project.

1.6 STOP ACTION LEVELS:

A. Inside Work Area:

1. Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8-hour period exceeds the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify the ENVIRONMENTAL CONSULTANT . After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by ENVIRONMENTAL CONSULTANT.

STOP ACTION LEVEL (f/cc)	IMMEDIATE STOP LEVEL (f/cc)	MINIMUM RESPIRATOR REQUIRED	PROTECTION FACTOR
0.5	1.0	Type A half-face	50

2. If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period of time cease all work except corrective action. Notify the ENVIRONMENTAL CONSULTANT. Do not recommence work until fiber counts fall below Stop Action Level given above for the type of respiratory protection in use. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the ENVIRONMENTAL CONSULTANT.

B. Outside Work Area:

1. If any air sample taken outside of the Work Area exceeds the base line established below or is greater than 0.010 f/cc as determined by PCM analysis, immediately and automatically stop all work except corrective action. The ENVIRONMENTAL CONSULTANT shall inspect and determine the source of the high reading and so notify the Contractor in writing.
2. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:
 - a. Immediately erect new critical barriers as set forth in Section 029526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).
 - b. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.
 - c. Require that respiratory protection as set forth in Section 029562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 029714 Work Area Clearance.
 - d. Leave Critical Barriers in place until completion of work and insure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area.
 - e. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 029563 Decontamination Units at entry point to affected area.
 - f. After Certification of Visual Inspection in the Work Area remove critical barriers

separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 029714 Work Area Clearance.

3. If the high reading was the result of other causes initiate corrective action as determined by the ENVIRONMENTAL CONSULTANT.

- C. Effect on Contract Sum: Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities or negligence. The Contract Sum and schedule will be reviewed and may be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.7 ANALYTICAL METHODS:

- A. The following methods will be used by the ENVIRONMENTAL CONSULTANT in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.
 1. Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 methodology.
 2. Transmission Electron Microscopy (TEM) will be performed using the AHERA guidelines found in 40 CFR Part 763 Appendix A sub part E.

1.8 SAMPLE VOLUMES:

- A. General: The number and volume of air samples taken by the ENVIRONMENTAL CONSULTANT will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used and the site conditions.

1.9 SCHEDULE OF AIR SAMPLES:

- A. Daily:
 1. From start of work of Section 029526 Temporary Enclosures through the work of Section 029711 Project Decontamination, the ENVIRONMENTAL CONSULTANT may be taking the following samples on a daily basis:
 - a. In the immediate area of the abatement work: Samples taken in this area should represent, with reasonable accuracy, the airborne concentration of asbestos fibers which may reach the breathing zone of removal personnel. One asbestos worker shall be required to wear a personal exposure sampling device or a proximity sample simulating the breathing zone of removal personnel. A low volume sampler shall be employed drawing a minimum sample volume of 180 liters. Two (2) samples shall be taken per work shift.
 - b. Inside the Work Area: Two (2) samples shall be taken per work shift. A low volume sampler shall be employed, drawing a minimum sample volume of 180 liters.
 - c. Outside the Work Area, but inside the building: Two (2) samples shall be taken per work shift. A high volume sampler shall be employed, drawing a sufficient sample volume to reach a detection limit of 0.010 f/cc. The sampling device shall be placed in locations where potential contamination could occur (e.g. outside entrances and exits to the Work Area) and shall be moved periodically to assess the potential for contamination of adjacent areas at all critical points in the containment system. Special attention shall be given to locations where exhaust ducts from air filtration devices run through occupied areas of the building.
 - d. In the Clean Room of the Personnel/Waste Decontamination Unit: A minimum of one (1) sample shall be taken in the Decontamination Unit Clean Room per work shift. A high volume sampler shall be employed drawing a sufficient sample volume to reach a detection limit of 0.010 f/cc. The sample(s) shall be taken at a time when activity

levels are expected to be at their peak (e.g. shift breaks).

- e. Downwind of Air Filtration Unit Exhaust: Where feasible due to on site conditions, one (1) sample shall be taken per work shift to evaluate potential fiber escape through the Air Filtration Device. A high volume sampler shall be employed drawing a sufficient sample volume to reach a detection limit of 0.010 f/cc.
- f. The Analytical Method for all daily environmental monitoring shall be Phase Contrast Microscopy (PCM) (NIOSH 7400).

B. Additional samples may be taken at the ENVIRONMENTAL CONSULTANT's discretion. If airborne fiber counts exceed allowable limits, additional samples will be taken as necessary to monitor fiber levels.

1.10 LABORATORY TESTING:

- A. The services of a testing laboratory may be employed by the ENVIRONMENTAL CONSULTANT to perform laboratory analyses of the air samples. A microscope and technician may be set up at the job site, or samples will be sent by courier so that verbal reports on air sample results can be obtained within 24 hours of the start time of the samples. The Contractor shall have access to all air monitoring tests and results.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 ADDITIONAL TESTING:

- A. The Contractor may conduct his/her own air monitoring and laboratory testing. If he/she elects to do this, the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner.

3.2 PERSONAL MONITORING:

- A. The ENVIRONMENTAL CONSULTANT shall not perform air monitoring to meet Contractor's OSHA requirements for personnel sampling or any other purpose.

END OF SECTION

SECTION 029503A

TEMPORARY FACILITIES

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- D. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

- A. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS:

- A. Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are approved by the Owner's Representative.
 - 1. Scaffolding: Submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.
 - 2. Hot water heater: Submit manufacturers name, model number, size in gallons, heating capacity, power requirements.
 - 3. Decontamination Unit Sub-panel: Submit product data.
 - 4. Ground Fault Circuit Interrupters (GFCI): Submit product data.
 - 5. Lamps and Light Fixtures: Submit product data.
 - 6. Self-Contained Toilet Units: Provide product data and name of subcontractor to be used for servicing self-contained toilets. Submit method to be used for servicing.
 - 7. First Aid Supplies: Provide list of contents of first aid kit. Submit in form of check list.
 - 8. Fire Extinguishers: Provide product data. Submit schedule indicating location at job site.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT:

- A. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 SCAFFOLDING:

- A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- B. The rungs of all metal ladders, etc. shall be equipped with an abrasive non-slip surface.
- C. All surfaces subject to foot traffic shall have a nonskid surface. Surfaces shall be cleaned as required to remove slippery materials.

- D. At the completion of the removal work, all construction aids shall be cleaned within the work area (encapsulated for wood) and wrapped in one layer of six (6) mil polyethylene sheeting and sealed before removal from the work area.

2.3 WATER SERVICE:

- A. Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.
- B. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
- C. Hot Water Heater: Provide UL rated 30 gallon electric hot water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.
- D. Hot Water: May be secured from the building hot water system, provided backflow protection is installed at the point of connection as described in this section under Temporary Water Service connection, and if authorized in writing by the Owner's Representative.

2.4 ELECTRICAL SERVICE:

- A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
- B. Temporary Power: Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.
- C. Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.
- D. Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate the panel exterior to Work Area.
- E. Electrical Power Cords: Use only grounded extension cords; use "hard service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect

separate lengths of electric cords, if single lengths will not reach areas of work.

- F. Lamps and Light Fixtures: Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture. Use of building lighting fixtures is strictly prohibited.

2.5 TEMPORARY HEAT:

- A. Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the fuel being consumed. Use steam or hot water radiation heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.6 FIRST AID:

- A. Comply with governing regulations and recognized recommendations within the construction industry.

2.7 FIRE EXTINGUISHERS:

- A. Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case. The fire extinguishers shall comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Provide not less than one extinguisher in each work area in the equipment room of the decontamination unit and one outside the work area in the clean room. Distance between fire extinguishers within the work area shall not exceed seventy-five (75) feet.

PART 3 EXECUTION

3.1 SCAFFOLDING:

- A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.
- B. Clean as necessary, debris from non-slip surfaces.
- C. At the completion of abatement work clean all construction aids within the work area, wrap in one layer of 6 mil polyethylene sheeting and seal before removal from the Work Area.

3.2 INSTALLATION, GENERAL:

- A. Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.
- B. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.
- C. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

- D. The Contractor shall coordinate with the Building Owner for connection to existing building utilities. No connections shall be executed without prior approval of the building owner.

3.3 WATER SERVICE:

- A. Water connection (without charge) to Owner's existing potable water system is the responsibility of the Contractor. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 F. Supply hot and cold water to the Decontamination Unit in accordance with Section 01516. In addition, water shall be supplied for all worksite uses.
- B. Maintain hose connections and outlet valves in leak proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 ELECTRICAL SERVICE:

- A. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
- B. Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the Work Area are not to be used. All power and lighting to the Work Area and Decontamination facilities are to be provided from temporary electrical panel described below.
 - 1. Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of the Owner's designated Representative.
 - 2. Lockout power to circuits running through Work Area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and turn keys over to the Owner's Representative for control. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard".
- C. Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative.
- D. Upon request provide and bear all costs associated with off-hour or twenty-four (24) hour electrical service to the work area as required by the Building Owner for Air Monitoring services.
- E. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be at least exposed to damage from construction operations.
- F. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.
- G. Temporary wiring in the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated)

electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

- H. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:
1. One Circuit for each HEPA filtered fan unit.
 2. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
 - a. One outlet in the work area for each 2500 square feet of work area
 - b. One outlet at each decontamination unit, located in equipment room
 3. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:
 - a. One in each work area
 - b. One at clean side of each Decontamination Unit.
 - c. One at each exhaust location for HEPA filtered fan units
 4. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use for conducting final air sampling as set forth in Section 029714 Work Area Clearance as follows:
 - a. Five inside work area
 - b. Two outside work area in location designated by Owner's Representative

3.5 TEMPORARY LIGHTING:

- A. Lockout: Lock out all existing power to lighting circuits in Work Area as described in section 029526 Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described above.
- B. Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level.
 - a. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
- C. Provide lighting in areas where work is being preformed as required to supply a 100 foot candle minimum light level.
- D. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.
- E. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.
- F. Provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.
- G. Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

3.6 TEMPORARY HEAT:

- A. General: Provide temporary heat where indicated or needed for performance of work.
- B. Maintain a minimum temperature of 70 degrees F where finished work has been installed.
- C. Maintain a minimum temperature of 75 degrees F in the shower of the decontamination unit.
- D. Maintain a minimum temperature of 70 degrees F in the Work Area at all times that work is being performed. At all other times and at the completion of removal work, but before the start of reconstruction work, maintain a minimum temperature of 50 degrees F.
- E. Maintain a minimum temperature of 70 degrees F in the Work Area at all times during and after removal work.

3.8 FIRE EXTINGUISHERS:

- A. Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area in the Equipment Room and one outside Work Area in the Clean Room.

END OF SECTION

SECTION 029513

TEMPORARY PRESSURE DIFFERENTIAL & AIR FILTRATION SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- E. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 MONITORING:

- A. The Contractor shall supply a digital manometer with a continuous recorder (e.g. strip chart) and alarm for the purpose of continuously monitoring and recording the pressure differential between the Work Area and the building outside of the Work Area. The Contractor shall be solely responsible for providing competent individual(s), currently licensed by the New Jersey Department of Labor to perform asbestos work to observe and monitor the work area(s) and digital manometer readings during all non-working hours including nights, weekends and holidays. This individual shall be authorized and capable of investigating and remediating any drop in the pressure differential system between the work area(s) and the building outside the work area.

1.3 SUBMITTALS:

- A. Before Start of Work: Submit design of pressure differential system to the ENVIRONMENTAL CONSULTANT for review. Do not begin work until the submittal is approved. Include in the submittal:
 - 1. Number of HEPA-equipped air filtration units required and the calculations necessary to determine the number of machines.
 - 2. Description of projected air flow within Work Area and methods required to provide adequate air flow in all portions of the work area.
 - 3. Anticipated pressure differential across Work Area enclosures.
 - 4. Description of methods of testing for correct air flow and pressure differentials.
 - 5. Manufacturer's product data on the HEPA-equipped air filtration units to be used.
 - 6. Location of the machines in the Work Area.
 - 7. Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power.
 - 8. Description of work practices to insure that airborne fibers travel away from workers.
 - 9. Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of Work Area.
- B. On a weekly basis: Submit the printout from the pressure differential monitoring equipment. Mark the printout with date and start time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each days' record, times of starting and stopping abatement work, type of work in progress, breaks for lunch and other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 ½" by 11" paper. Label with project name, Contractor name and date.

1.4 QUALITY ASSURANCE:

- A. Monitor pressure differential at Personnel and Equipment Decontamination Units with one or more digital manometers equipped with a continuous recorder. Manometers shall be equipped with a

warning buzzer which will sound if pressure differential drops below negative 0.03 inches of water column.

PART 2 PRODUCTS

2.1 HEPA-EQUIPPED AIR FILTRATION UNITS:

- A. General: Supply the required number of HEPA-equipped air filtration units to the site in accordance with these specifications. A minimum of one additional unit shall be installed as a backup to be used during primary unit filter changing and upon unit failure. Use units that meet the following requirements:
1. Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Provide units whose cabinets are:
 - a. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance.
 - b. Arranged to provide access to and replacement of all air filters from intake end.
 - c. Mounted on casters or wheels.
 2. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.
 3. HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.
 - a. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.
 - b. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 μm dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
 - c. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
 - d. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. Provide units with the following pre-filters:
 - i. First-stage pre-filter: low-efficiency type (e.g., for particles 100 μm and larger).
 - ii. Second-stage (or intermediate) filter: medium efficiency (e.g., effective for particles down to 5 μm).
 - e. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.
 4. Instrumentation: Provide units equipped with:
 - a. Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed.
 - b. A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point.
 - c. Elapsed time meter to show the total accumulated hours of operation.

5. Safety and Warning Devices: Provide units with the following safety and warning devices:
 - a. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter.
 - b. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge.
 - c. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red).
 - d. Audible alarm if unit shuts down due to operation of safety systems.
6. Electrical components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.
7. Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
 - a. Aerospace America, Inc. "Aero-Clean 2000" 900 Truman Parkway P.O. Box 189 Bay City, Michigan 48707A
 - b. Asbestos Control Technology, Inc. "Micro-Trap" P.O. Box 183 Maple Shade, NJ 08052
 - c. Control Resource Systems, Inc. "Hog" 2000 670 Mariner Drive Michigan City, Indiana 46360
 - d. Global Consumer Services, Inc. "Red Baron" 1721 N. Highland Avenue Los Angeles, CA 90028
 - e. Tri-Dim Filter Corporation "ACCU-2M" 1431 West Lake Street Chicago, Illinois 60607
 - f. Or Approved Equal

PART 3 EXECUTION

3.1 PRESSURE DIFFERENTIAL ISOLATION:

- A. Isolate the Work Area from all adjacent areas or systems of the building with a Pressure Differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area.
- B. Relative Pressure in Work Area: Continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of negative 0.03 inches of water, at a minimum.
- C. Accomplish the pressure differential by exhausting a sufficient number of HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:
 1. Establish required air circulation in the work area, personnel and equipment decontamination units.
 2. Establish isolation by increased pressure in adjacent areas or as part of seals where required.
 3. Exhaust a sufficient number of units from the work area to develop one complete air exchange every fifteen (15) minutes.

4. The required number of units is the number determined above plus one additional unit.
- D. Vent HEPA filtered fan units to outside of building unless authorized in writing by ENVIRONMENTAL CONSULTANT.
1. Mount units to exhaust directly or through disposable ductwork.
 2. Use only new ductwork except for sheet metal connections and elbows.
 3. Use ductwork and fittings of same diameter or larger than discharge connection on fan unit.
 4. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet.
 5. If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use six feet of spiral wire-reinforced flex duct after direction change.

3.2 AIR CIRCULATION IN THE WORK AREA:

- A. Air Circulation: For purposes of this section air circulation refers to either the introduction of outside air to the Work Area or the circulation and cleaning of air within the Work Area.
- B. Air circulation in the Work Area is a minimum requirement intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The Contractor may also use this air circulation as part of the engineering controls in his worker protection program.
- C. Determining the Air Circulation Requirements: Provide a fully operational air circulation system supplying a minimum of four (4) air changes per hour.
- D. Determine Number of Units needed to achieve required air circulation according to the following procedure:
1. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate and multiplying by 60.

Air Circulation Required in Cubic Feet of Air per Minute (CFM) =

$$\frac{\text{Volume of work area (CF)}}{\text{X}} \quad \frac{\text{Number of air changes per hour}}{60 \text{ (minutes per hour)}}$$

2. Divide the air circulation requirement (CFM) above by capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.

$$\text{Number of Units} = \frac{\text{Air circulation Requirement(CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

3. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.3 EXHAUST SYSTEM:

- A. Pressure differential isolation and air circulation in the Work Area are to be accomplished by an exhaust system as described below.
- B. Exhaust all units from the Work Area to meet air circulation requirement of this section.
- C. Location of HEPA-equipped air filtration units: Locate fan unit(s) so that makeup air enters work area

primarily through decontamination facilities and traverses Work Area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.

- D. Place the intake portion of the unit or its exhaust duct through an opening in the plastic barrier or wall covering. Seal the plastic sheeting around the unit or exhaust duct with tape.
- E. Vent to Outside of Building, unless authorized in writing by the ENVIRONMENTAL CONSULTANT.
- F. Decontamination Units: Arrange Work Area and decontamination units so that the majority of make-up air comes through the Decontamination Unit.
- G. Supplemental Makeup Air Inlets: Provide where required for proper air flow through the Work Area in location approved by the ENVIRONMENTAL CONSULTANT by making openings in the plastic sheeting that allow air from outside the building into the Work Area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the Work Area from occupied clean areas. Cover with flaps to reseal automatically if the pressure differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

3.4 AIR CIRCULATION IN DECONTAMINATION UNITS:

- A. Pressure Differential Isolation: Continuously maintain the pressure differential required for the work area in the:
 - 1. Personnel Decontamination Unit: across the Shower Room with the Equipment Room at a lower pressure than the Clean room.
 - 2. Equipment Decontamination Unit: Across the Holding Room with the Wash Room at a lower pressure than the Clean Room.
- B. Air Circulation: Continuously maintain air circulation in Decontamination Units at same level as required for Work Area.
- C. Air Movement: Arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room.

3.5 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

- A. General: Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of Section 01503 "Temporary Facilities". Do not use existing branch circuits to power fan units.
- B. Testing the System: Test pressure differential system before any asbestos-containing material is wetted or removed. After the Work Area has been prepared, the decontamination facility set up, and the fan unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of pressure differential system to Asbestos Safety Technician.
- C. Demonstrate Condition of Equipment for each HEPA filtered fan unit and pressure differential monitoring equipment including proper operation of the following:
 - 1. Squareness of HEPA Filter.
 - 2. Condition of seals.
 - 3. Proper operation of all lights.
 - 4. Proper operation of automatic shut down if exhaust is blocked.

5. Proper operation of alarms.
 6. Proper operation of magnehelic gauge.
 7. Proper operation and calibration on pressure monitoring equipment.
- D. Demonstrate Operation of the pressure differential system to the Asbestos Safety Technician will include, but not be limited to, the following:
1. Plastic barriers and sheeting move lightly in toward Work Area.
 2. Curtain of decontamination units move lightly in toward Work Area.
 3. There is a noticeable movement of air through the Decontamination Unit.
 4. Use smoke tube to demonstrate air movement from Clean Room through Shower Room to Equipment Room.
 5. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed.
 6. Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, ductwork or outside.
- E. Modify the Pressure Differential System as necessary to demonstrate successfully the above.
- F. Use of System During Abatement Operations:
1. Start fan units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
 2. Do not shut down air pressure differential system during encapsulating procedures, unless authorized by the ENVIRONMENTAL CONSULTANT. Supply sufficient pre-filters to allow frequent changes.
 3. Start abatement work at a location farthest from the fan units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and fan units are operating again.
 4. At completion of abatement work, allow fan units to run as specified under Section 029711 - Project Decontamination, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the Work Area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.
- G. Dismantling the System:
1. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.

END OF SECTION

SECTION 029526

TEMPORARY ENCLOSURES & WORK AREA PREPARATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- F. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 SUBMITTALS:

- A. Before Start of Work submit the following to the ENVIRONMENTAL CONSULTANT for review. Do not begin work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
- B. For Spray Cement, submit the following:
 - 1. Product description including major components and solvents.
 - 2. Manufacturer's installation instructions. Indicate portions applicable to the project.
 - 3. Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for spray cement material proposed for use during the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.
- C. Sheet Plastic: For fire retardant plastic submit test reports on NFPA 701 test.
- D. Signs: Submit samples of signs to be used.

PART 2 PRODUCTS

2.1 SHEET PLASTIC:

- A. Polyethylene Sheeting: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6 mil thick as indicated, frosted or black as indicated.
- B. Provide materials that meet the following fire safety requirements:
 - 1. When wet or being installed:
 - a. Do not create combustible vapors.
 - b. Have no flash point.
 - c. Are not noxious.
 - d. Department of Transportation category of non-friable
 - 2. When dry, material must have a Class A rating as a building material and meet the following requirements when tested in accordance with ASTM E-84.
 - a. Flame Spread no greater than 20.
 - b. Fuel Contributed 0.
 - c. Smoke Developed no more than 110.
 - 3. Deliver materials to the job site in unopened, factory labeled containers.

2.2 MISCELLANEOUS MATERIALS:

- A. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to polyethylene sheeting.
- B. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to polyethylene sheeting.

PART 3 EXECUTION

3.1 SEQUENCE OF WORK:

- A. Carry out work of this section sequentially. Complete each activity before proceeding to the next.
 - 1. The Work Area shall mean the location where asbestos-abatement work occurs. It is a variable of the extent of work of the Contract. It may be a portion of a room, a single room, or a complex of rooms. A "Work Area" is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.
 - 2. The Contractor shall inspect each work location with the ENVIRONMENTAL CONSULTANT. The Contractor and ENVIRONMENTAL CONSULTANT shall agree on conditions of materials and worksite and select the appropriate abatement procedures. Should the ENVIRONMENTAL CONSULTANT and Contractor not be in agreement, the Building Owner and ENVIRONMENTAL CONSULTANT shall make the final decision.
 - 3. Completely isolate the Work Area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 029711. Perform all such required cleaning or decontamination at no additional cost to owner.
 - 4. Each work area location shall be pre-cleaned as per Section 02913A. Respirators and protective equipment are required as per Sections 029560 and 029562.
 - 5. Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of Work Area isolation.
 - 6. Stationary restroom equipment (toilets, sinks, etc.) shall be completely covered with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, securely taped in place with duct tape and individually sealed. Such equipment shall be considered outside the work area unless covering plastic or seal is breached.
 - 7. Disable ventilating systems or any other system bringing air into or out of the Work Area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.
 - 8. Lockout power to the Work Area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of the Owner's designated Representative.
 - 9. Lockout power to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of the Owner's designated representative. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard". Label circuits in hidden locations but which may be affected by the work in a similar manner.

3.2 EMERGENCY PRECAUTIONS:

- A. The Contractor shall prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, supplied air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation. Note that nothing in this Specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. The Contractor shall provide barricades and adequate protection to safely prevent accidental entrance to the abatement area by any building occupants. Signage shall be posted in visible locations a sufficient distance to allow an individual to take all necessary protective precautions prior to being exposed to airborne asbestos fiber concentrations.
- C. Before the Contractor starts actual abatement of asbestos material, the local fire department and ambulance crews shall be notified, by the Contractor, as to the dangers of entering the work area. The Contractor shall make every effort to help these agencies and form plans of action should their personnel need to enter the contaminated area.
- D. Local medical emergency personnel, both ambulance crews and hospital emergency room staff, shall be notified, by the Contractor, as to the possibility of having to handle injured work persons who are contaminated with asbestos dust. They shall be advised on safe decontamination procedures.
- E. First aid shall comply with the governing regulations and all recognized recommendations within the construction industry.
- F. Except as otherwise indicated, submit special reports directly to the Owner within one day of occurrence requiring special report, with copy to Owner's Representative, Project Consultants and others affected by occurrence.

3.3 EMERGENCY EXITS:

- A. Provide emergency exits and emergency lighting as set forth below:
 - 1. Emergency Exits: At each existing exit door from the Work Area provide the following means for emergency exiting:
 - a. Arrange exit door so that it is secure from outside the Work area but permits exiting from the Work Area.
 - b. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2" thick.
 - c. Provide lighted, battery powered exit sign at each exit.

3.4 CONTROL ACCESS:

- A. Isolate the Work Area to prevent entry by building occupants into Work Area or surrounding controlled areas. Accomplish isolation by the following:
 - 1. Coordinate with the Asbestos Safety Technician the doors and other openings that must be secured to isolate Work Area.
 - 2. After receiving authorization from the Asbestos Safety Technician, lock all doors into Work Area. If doors cannot be locked, chain shut. Cover any signs that direct emergency exiting, either outside or inside of Work Area, to locked doors. Do not obstruct doors required for emergency exits from Work Area or from building.
 - 3. After receiving authorization from the Asbestos Safety Technician, construct partitions or

closures across any opening into Work Area. Partitions are to be a minimum of 8 feet high. All isolation barrier construction shall conform to the requirements set forth in NJAC 5:23-8.19.

- 4. Fabricate partitions from 2 X 4 wood studs with ½” plywood on one face. Brace at 16” on center.
- B. Locked Access: Arrange Work Area so that the only access into Work Area is through lockable doors to personnel and equipment decontamination units.
- C. Provide Warning Signs at each locked door leading to Work Area reading as follows: Print text in both English and Spanish:

LEGEND	NOTATION
KEEP OUT	3” Sans Serif Gothic or Block
BEYOND THIS POINT	1” Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK	1” Sans Serif Gothic or Block
IN PROGRESS	1” Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

- D. Immediately inside doors and outside critical barriers post an approximately 20 inch by 14 inch manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

3.5 LEGEND:

- A. Provide spacing between respective lines at least equal to the height of the respective upper line.

DANGER
 ASBESTOS
 MAY CAUSE CANCER
 CAUSES DAMAGE TO LUNGS
 AUTHORIZED PERSONNEL ONLY
 WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

3.6 RESPIRATORY AND WORKER PROTECTION:

- A. Before proceeding beyond this point in providing Temporary Enclosures:
 - 1. Provide Worker Protection per Section 029560
 - 2. Provide Respiratory Protection per Section 029562
- B. Provide Personnel Decontamination Unit per Section 029563

3.7 CRITICAL BARRIERS:

- A. Completely Separate the Work Area from other portions of the building, and the outside by closing all openings with two (2) layer sheet plastic barriers at least 6 mil in thickness each.
- B. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the Work Area with two (2) layers of polyethylene sheeting at least 6 mil in thickness each, individually taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed.

- C. Provide two (2) layers of Sheet Plastic barriers at least 6 mil in thickness as required to seal openings completely from the Work Area into adjacent areas. Individually seal the perimeter of each sheet plastic barrier with duct tape and spray cement.
- D. Mechanically Support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic sheeting. Following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the Owner's Representative:
 - 1. Plywood squares 6" x 6" x 3/8" held in place with one 6d smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, corner and at maximum 4 feet on centers.
 - 2. Nylon or polypropylene rope or wire with a maximum unsupported span of 10 feet, minimum 1/4" in diameter suspended between supports securely fastened on either side of opening at maximum 1 foot below ceiling. Tighten rope so that it has 2" maximum dip. Drape plastic over rope from outside Work Area so that a two foot long flap of plastic extends over rope into Work Area. Staple or wire plastic to itself 1" below rope at maximum 6" on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a "shelf" upon which debris could collect.
- E. Provide Pressure Differential System per Section 029513.
- F. Clean equipment, housings and ducts of any overspray materials prior to erection of any Critical Barrier that will restrict access.

3.8 PREPARE AREA:

- A. Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.
- B. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc. which cover any part of the surface to be worked on with the work.
- C. Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.
- D. Clean all furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01712 Cleaning and Decontamination Procedures, prior to being moved or covered. All equipment, furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by ENVIRONMENTAL CONSULTANT.
- E. Clean all surfaces in the Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of the primary barrier.

3.9 PRIMARY BARRIER:

- A. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.
- B. Sheet Plastic: Protect floor surfaces in the Work Area with two (2) layers of six (6) mil plastic sheeting and wall surfaces with one (1) layer of six (6) mil. thick plastic sheeting, or as otherwise directed on the

Contract Drawings.

1. Cover Floor of Work Area with 2 individual layers of polyethylene sheeting, each at least 6 mil in thickness. The first layer shall extend up the wall at least 12 inches. The second layer shall extend up the wall at least 24 inches. Form a sharp right angle bend at the junction of the floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all seams in floor covering. Sheeting shall be sized to minimize seams. Install sheeting so that top layer can be removed independently of bottom layer.
2. Cover carpeting with three (3) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene floor sheeting.
3. Cover all walls in the Work Area including "Critical Barrier" sheet plastic barriers with one layer of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape and spray-glue, so as to overlap floor sheeting by at least 18 inches in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape.
4. All vertical and horizontal surfaces except those of asbestos-containing materials shall be sealed with polyethylene sheeting.
5. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide $\frac{3}{4}$ " exterior grade plywood treads securely held in place, over the plastic. Do not cover rungs or rails with any type of protective materials.
6. Repair of Damaged Polyethylene Sheeting: Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

3.10 STOP WORK:

- A. If the Critical or Primary barrier falls or is breached in any manner stop work immediately. Do not resume work until authorized in writing by the Asbestos Safety Technician.

3.11 EXTENSION OF WORK AREA:

- A. Extension of Work Area: If a Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add the affected area to the Work Area, enclose it as required by this Section of the specification and decontaminate it as described in Section 029711 Project Decontamination.

3.12 SECONDARY BARRIER:

- A. Use a secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work as specified in the appropriate work sections.

3.13 EXTERIOR ENCLOSURES:

- A. Construct exterior enclosures utilizing rigid construction consisting of nominal 2x4 inch studs spaced 16 inches on center and covered with a minimum of one-half inch plywood or approved equal framing and board covering. The approved enclosure shall be covered with two (2) layers of 6 mil polyethylene sheeting.

END OF SECTION

SECTION 029560

WORKER PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- G. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. This section describes the equipment and procedures required for protecting workers and site visitors against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Respiratory Protection is specified in Section 029562.

1.4 WORKER TRAINING:

- A. AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.
- B. State and Local License: All workers are to be trained, certified and accredited as required by state or local code or regulation.
- C. Train, in accordance with 29 CFR 1926, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:
 - 4. Methods of recognizing asbestos.
 - 5. Health effects associated with asbestos.
 - 6. Relationship between smoking and asbestos in producing lung cancer.
 - 7. Nature of operations that could result in exposure to asbestos.
 - 8. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - a. Engineering controls.
 - b. Work practices.
 - c. Respirators.
 - d. Housekeeping procedures.
 - e. Hygiene facilities.
 - f. Protective clothing.
 - g. Decontamination procedures.
 - h. Emergency procedures.
 - i. Waste disposal procedures.
 - 9. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134.
 - 10. Appropriate work practices for the work.
 - 11. Requirements of medical surveillance program.

12. Review of 29 CFR 1926.
13. Pressure Differential Systems.
14. Work practices including hands on or on-job training.
15. Personal Decontamination procedures.
16. Air monitoring, personal and area.

1.5 MEDICAL EXAMINATIONS:

- A. Provide medical examinations for all workers who may encounter an airborne fiber concentration level of 0.1 fibers per cubic centimeter (f/cc) or greater for an 8 hour Time Weighted Average. In the absence of specific airborne fiber concentration data, provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926 In addition, provide an evaluation of the individuals' ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review, if requested. Do not start work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
- B. AHERA Accreditation: Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.
- C. State and Local License: Submit evidence that all workers have been trained, and are currently certified and accredited as required by state or local code or regulation.
- D. Report from Medical Examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:
 1. Name and Social Security Number
 2. Physicians Written Opinion from examining physician including at a minimum the following:
 - a. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
 - b. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - c. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
 3. Copy of information that was provided to physician in compliance with 29 CFR 1926
 4. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.
- E. Notarized Certifications: Submit certification signed by an officer of the abatement contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.

PART 2 EQUIPMENT

2.1 PROTECTIVE CLOTHING:

- A. Provide fire-retardant "Tyvek" disposable protective clothing consisting of full-body coveralls, head covers, and boots as required by the most stringent OSHA standards applicable to the work and as manufactured by DuPont or approved equal. Eye protection, gloves, and safety shoes shall be worn. They shall be in accordance with ANSI Z89.1 (1969) and ANSI Z41.1 (1967).
- B. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area.
- C. Goggles: Provide eye protectives (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.
- D. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area, dispose of as asbestos-contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT:

- A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Project Consultants, and other authorized representatives who may inspect the jobsite. Provide two (2) respirators and six (6) complete coveralls and where applicable provide six (6) respirator filter changes per day. Sufficient HEPA cartridges for powered air-purifying respirators shall be provided for the workers to change during the work shift. No HEPA cartridges shall be used longer than three (3) eight (8) hour work shifts. The respirators shall be worn at all times when in the contaminated area. There shall be no exceptions.

PART 3 EXECUTION

3.1 GENERAL:

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the Work Area.
- B. Each time Work Area is entered remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES:

- A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:
 - 1. Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:
 - a. When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.
 - b. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - 1) Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep

- canisters dry.
- 2) With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.
 - 3) Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.
 - 4) Carefully wash face piece of respirator inside and out.
 - 5) If using PAPR: shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this may short out and destroy the battery.
 - 6) Shower completely with soap and water.
 - 7) Rinse thoroughly.
 - 8) Rinse shower room walls and floor prior to exit.
- c. Proceed from shower to Clean Room and change into street clothes or into new disposable work items.
- B. Remote Shower: The procedures above are to be used if the decontamination facility is used as a remote shower. If a worker cannot gain direct access to the Equipment Room require that he enter Decontamination Unit and proceed directly through Shower Room to Equipment Room. Decontamination procedure is then completed as required above.
- C. Within the Work Area: Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.

END OF SECTION

SECTION 029562

RESPIRATORY PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- H. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber levels encountered in the work area or as required for other toxic or oxygen-deficient situations encountered.

1.3 STANDARDS:

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
 - 17. OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1101 and Section 1910.134. 29 CFR 1926.58
 - 18. CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air"
 - 19. CSA - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1-00, "Compressed Breathing Air"
 - 20. ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992
 - 21. NIOSH - National Institute for Occupational Safety and Health
 - 22. MSHA - Mine Safety and Health Administration

1.4 SUBMITTALS:

- A. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
- B. Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.
- C. System Diagram: When a Type "C" supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in Work Area(s), routing of air lines to Work Area(s) from compressor.
- D. Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

- E. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA 1926.58.
- F. Resume information: Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.

1.5 DELIVERY:

- A. Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer's containers.

PART 2 EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS:

- A. Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.
- B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1998). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.
- C. Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

PART 3 EXECUTION

3.1 GENERAL:

- A. Respiratory Protection Program: Comply with ANSI Z88.2 - 1992 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
- B. Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.
- C. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 029714.
- D. Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used shall be half-face air-purifying respirators with high efficiency (HEPA) filters.
- E. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING:

- A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing have been provided.
- B. On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

- C. Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1992).

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED:

- A. Provide respirator protection as follows:
 - 1. Negative pressure air-purifying respirators for all preparation, glove bag removal and Category I removal activities.
 - 2. Powered Air-Purifying Respirators: PAPR, positive pressure, full-face, or half-face respirators (if half-faced respirators are used, eye protection shall be provided by the Contractor).

3.4 PERMISSIBLE EXPOSURE LIMIT (PEL):

- A. 8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed 0.1 fibers/cubic centimeter.

3.5 RESPIRATORY PROTECTION FACTOR:

- A. Respirator Type Protection Factor
 - 1. Air purifying: PF=10 - Negative pressure respirator High Efficiency filter half face-piece
 - 2. Air purifying: PF=50 - Negative pressure respirator High Efficiency filter full face-piece
 - 3. Powered Air Purifying (PAPR): PF=1000 - Positive pressure respirator High Efficiency filter Half or Full face-piece

3.6 AIR PURIFYING RESPIRATORS:

- A. Air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior body of respirator, including head straps be washed each time a worker leaves the Work Area.
- B. Powered air purifying full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, and be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION

SECTION 029563

DECONTAMINATION UNITS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- I. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Refer to Section 029503A Temporary Facilities for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water and electrical.

1.3 SUBMITTALS:

- A. Before the Start of Work: Submit the following to the ENVIRONMENTAL CONSULTANT for review. Do not begin work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
 - a. Personnel Decontamination Unit: Provide shop drawing showing location and assembly of personnel decontamination units.
 - b. Equipment Decontamination Unit: Provide shop drawing showing location and assembly of equipment decontamination units.
 - c. Shower Pan: Provide shop drawing.
 - d. Shower Walls: Provide product data.
 - e. Shower Head and Controls: Provide product data.
 - f. Filters: Provide product data and shop drawing of installation on decontamination unit.
 - g. Hose Bib: Provide product data.
 - h. Shower Stall: for Wash Down Station provide product data and shop drawing showing and modifications.
 - i. Elastomeric membrane: Provide product data.
 - j. Lumber: Provide product data on fire resistance treatment.
 - k. Sump Pump: Provide product data.
 - l. Signs: Submit samples of signs to be used.

PART 2 PRODUCTS

- A. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6-mil thick as indicated, clear, frosted, or black as indicated.
- B. Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6-mil thick as indicated, frosted or black as indicated.
- C. Reinforced Polyethylene Sheet: Where plastic sheet is the only separation between the Work Area and building exterior, provide translucent, nylon reinforced, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6 mil thick as indicated, frosted or black as indicated.

- D. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- E. Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- F. Shower Pan: Provide one piece stainless steel shower pan with a minimum 6" depth, or approved equal.
- G. Shower Walls: Provide 8' long by approximately 7' high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.
- H. Shower Head and Controls: Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Supply shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.
- I. Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
 - 23. Primary Filter - Passes particles 20 microns and smaller.
 - 24. Secondary Filter - Passes particles 5 microns and smaller.
- J. Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.
- K. Shower Stall: For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4'-0" above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain or store and use for amended water. Mount filters inside shower stall on back wall beneath hose bib.
- L. Elastomeric membrane: Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 45 mil thickness.
- M. Lumber: Provide kiln dried lumber of any grade or species.
- N. Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

PART 3 EXECUTION

3.1 PERSONNEL DECONTAMINATION UNIT:

- A. Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Clean Room, Shower Room, Equipment Room. Require all persons without exception to pass through this Decontamination Unit for entry into and exiting from the Work Area for any purpose.

Provide temporary heating and lighting within Decontamination Units as necessary to provide safe and comfortable conditions. Decontamination chamber doors shall be of sufficient height and width to enable replacement of equipment that may fail and to safely stretch or carry an injured worker from the site without destruction of the chamber or unnecessary risk to the integrity of the work area. Such doors must be at least four (4) feet wide, and the distance between sets of flaps must be at least four (4) feet.

- B. Clean Room: Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.
 - 1. Construct using two (2) layers of opaque polyethylene sheeting, at least 6-mil in thickness, to provide an airtight seal between the Clean Room and the rest of the building.
 - 2. Locate so that access to Work Area from Clean Room is through Shower Room.
 - 3. Separate Clean Room from the building utilizing three (3) overlapping sheets of 6-mil polyethylene sheeting, weighted at the bottom.
 - 4. Require workers to remove all street clothes in this room, dress in clean, disposable coveralls, and don respiratory protection equipment. Do not allow asbestos-contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.
 - 5. Maintain floor of clean room dry and clean at all times. Do not allow overflow water from shower to wet floor in clean room.
 - 6. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
 - 7. Provide posted information for all emergency phone numbers and procedures.
 - 8. Provide 1 storage locker per employee.

- C. Shower Room (contaminated area): Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading to the Work Area from the Clean Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.
 - 1. Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
 - 2. Separate this room from the rest of the building with airtight walls fabricated of two (2) layers of opaque 6-mil polyethylene.
 - 3. Separate this room from the Clean Room utilizing three (3) overlapping sheets of 6-mil polyethylene sheeting, weighted at the bottom.
 - 4. Provide splash proof entrances to Clean Room with doors of flapped polyethylene.
 - 5. Provide shower head and controls supplied with hot and cold water adjustable within the shower.
 - 6. Provide a continuously adequate supply of liquid bath soap and shampoo and maintain in sanitary condition.
 - 7. Provide a continuously adequate supply of disposable bath towels.
 - 8. Arrange so that water from showering does not splash into the Clean or Equipment Rooms.
 - 9. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the Work Area.
 - 10. Used filters shall be disposed of as asbestos-containing waste material.
 - 11. Provide hose bib.

- D. Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers.

1. Separate this room from the Shower Room and the Work Area utilizing three (3) overlapping sheets of 6-mil polyethylene sheeting, weighted at the bottom.
 2. Separate this room from the rest of the building with airtight walls fabricated of two (2) layers of opaque 6-mil polyethylene.
 3. Provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every shift change expected. Roll the drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change with a clean drop cloth. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.
- E. Decontamination Sequence: Require that all workers and authorized visitors adhere to the following sequence when entering or leaving the Work Area.
1. All individuals that enter the work area shall sign the entry log, located in the clean room, upon each entry and exit.
 2. Entering Work Area: Worker enters Clean Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room.
 - a. Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room.
 - b. Worker proceeds to Work Area.
 3. Exiting Work Area:
 - a. Before leaving the Work Area, require the worker to remove all gross contamination and debris from the outside of the respirator, and protective clothing by wet wiping and HEPA vacuuming.
 - b. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment.
 - c. Extra work clothing such as boots, hard hats, goggles, gloves are to be stored in contaminated end of the Equipment Room.
 - d. Disposable coveralls are placed in a bag for disposal with other material.
 - e. Require that Decontamination procedures found in Section 029560 be followed by all individuals leaving the Work Area.
 - f. After showering, the worker moves to the Clean Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.2 CONSTRUCTION OF THE DECONTAMINATION UNITS:

- A. Walls and Ceiling: Construct airtight walls and ceiling using two (2) layers of polyethylene sheeting, at least 6-mil in thickness. Attach to existing building components or a temporary framework.
- B. Floors: Use two (2) layers (minimum) of 6-mil polyethylene sheeting to cover floors in all areas of the Decontamination Units. Use only clear plastic to cover floors.
- C. Flap Doors: Fabricated from three (3) overlapping sheets with openings a minimum of four feet (4') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of four feet (4') between entrance and exit of any room. Provide a minimum of four feet (4') between doors to airlocks.
- D. If the Decontamination area is located at the exterior of the building, adjacent to occupied areas of the building or within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the decontamination unit with a protective shell as follows.
 1. Decontamination unit shall be framed with 2"x4" (min) fire-rated lumber at 16" on center.

2. Walls and roof shall be covered with 1/2" (min) fire-rated plywood and all seams shall be caulked and sealed so as to provide an airtight barrier.
 3. The decontamination unit entrance shall be fitted with a lockable, louvered door.
 4. Two (2) layers of 6-mil polyethylene shall be applied to both sides of the airtight plywood enclosure.
- E. Visual Barrier: Where the Decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the Decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs covered with minimum 1/4 inch thick hardboard or 1/2 inch plywood. Where the solid barrier is provided, sheeting need not be opaque.
- F. Alternate methods of providing Decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.
- G. Electrical: Provide subpanel at Clean Room to accommodate all removal equipment. Power subpanel directly from a building electrical panel. Connect all electrical branch circuits to a ground-fault circuit protection device.

3.3 CLEANING OF DECONTAMINATION UNITS:

- A. Clean debris and residue from inside of Decontamination Units on a daily basis or as otherwise indicated on Contract Drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.
- B. If the Clean Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Unit and erect a new Decontamination Unit. Use the former Clean Room as an inner section of the new Equipment Room.

3.4 SIGNS:

- A. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:
 1. Provide signs in both English and Spanish.
 2. Legend:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

3. Provide spacing between respective lines at least equal to the height of the respective upper line.
4. Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:
5. Provide signs in both English and Spanish.

LEGEND	NOTATION
NO FOOD, BEVERAGES OR TOBACCO PERMITTED	3/4" Block
ALL PERSONS SHALL DON PROTECTIVE CLOTHING (COVERINGS) BEFORE ENTERING THE AREA	3/4" Block
ALL PERSONS SHALL SHOWER IMMEDIATELY AFTER LEAVING WORK AREA AND BEFORE ENTERING THE CHANGE AREA	3/4" Block

END OF SECTION

SECTION 029711

PROJECT DECONTAMINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- J. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

- A. General: Decontamination of the Work Area following asbestos abatement.
 - 9. If the asbestos abatement work is on damaged or friable materials the work is a three step procedure with two cleanings of the Primary Barrier plastic prior to its removal and one cleaning of the room surfaces to remove any new or existing contamination. Unless specifically indicated otherwise all materials are considered damaged or friable for purposes of this section.
 - 10. Operation of the pressure differential system is used to remove airborne fibers generated by the abatement work.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:
 - 1. Section 029981 Removal of Asbestos-Containing Materials.
- B. Work Area Clearance: Air testing and other requirements which must be met before release of Contractor and re-occupancy of the work area are specified in Section 029714 Work Area Clearance.

PART 2 PRODUCTS

2.1 GENERAL:

- A. Encapsulant shall be an asbestos binding compound such as Serpiflex Shield from Grace Construction Products or approved equal.

PART 3 EXECUTION

3.1 GENERAL:

- A. Work of This Section includes the decontamination of air in the Work Area which has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials in the space.
- B. Work of This Section includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:
 - 1. Primary and Critical Barriers erected by work of Section 029526.
 - 2. Decontamination Unit erected by work of Section 029563.
 - 3. Pressure Differential System installed by work of Section 029513.

- C. Work of this Section includes the cleaning, and decontamination of all surfaces (ceiling, walls, floors) of the Work Area, and all furniture or equipment in the Work Areas.

3.2 START OF WORK:

- A. Previous Work: During completion of the asbestos abatement work specified in other sections, the Secondary Barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.
- B. Start of Work: Work of this section begins with the cleaning of the Primary Barrier. At start of work the following will be in place:
 - 1. Primary Barrier: Two layers of polyethylene sheeting on floor and one layer on walls and ceilings.
 - 2. Critical Barrier: An airtight barrier between the Work Area and other portions of the building or the outside.
 - 3. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.
 - 4. Decontamination Units: For personnel and equipment in operating condition.
 - 5. Pressure Differential System: In operation.

3.3 FIRST CLEANING:

- A. First Cleaning: Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.
- B. Remove All Filters in Air Handling System(s) and dispose of as asbestos-containing waste in accordance with requirements of Section 029984 Disposal of Asbestos-Containing Waste Material.
- C. Wait twelve (12) hours to allow HEPA-equipped air filtration units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain Pressure Differential System in operation for the entire period.
- D. After completion of the first cleaning operation of the facility, the Contractor shall give written notification to the Asbestos Safety Technician (AST) that a pre-encapsulation inspection is needed.
- E. The AST shall perform a visual inspection of the work area to ensure that it is dry and dust free.
- F. After approval by the AST, the Contractor shall spray coat all dried exposed surfaces with a sealant. The surfaces to be coated shall include the polyethylene which has been used to cover walls, floors, ceilings and non-removable fixtures and equipment.
- G. Encapsulation of substrate: Perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, at this time. Maintain Pressure Differential System in operation during encapsulation work. Perform work only after meeting the following requirements:
 - 1. Surfaces to be covered have met the requirements for a visual inspection in this section.
- H. After the encapsulation of the polyethylene, the first layer shall be carefully removed and rolled up with the contaminated portion inside. All equipment, machinery, scaffolding, tools, etc. within the

isolated work area shall be cleaned with amended water, moved to the equipment room, and properly removed from the work area.

3.4 SECOND CLEANING:

- A. Second Cleaning: Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.
- B. Removal of Primary Barriers:
 - 1. Immediately following the second cleaning of the remaining layer of Primary plastic, remove all Primary Barrier sheeting and Material Decontamination Unit, if there is one, leaving only:
 - a. Critical Barrier: Which forms the sole barrier between the Work Area and other portions of the building or the outside.
 - b. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.
 - c. Decontamination Unit: For personnel, in operating condition.
 - d. Pressure Differential System: Maintain in continuous operation.

3.5 FINAL CLEANING:

- A. Final Cleaning: Carry out a final cleaning of all surfaces in the Work Area in the same manner as the previous cleanings.
- B. The Contractor shall request that a final clean up inspection be performed to insure all visible asbestos has been removed, the area is dust free and that the work area may have Post Removal Sampling. The AST and the Contractor shall perform a complete visual inspection of the entire work area including:
 - 1. Decontamination Unit.
 - 2. Primary seals and critical barriers over ventilation openings, doorways, windows, and other openings.
- C. Look for debris from any sources, residue on surfaces, dust or other matter. If any such debris, residue, dirt or other matter is found, repeat the final cleaning and continue decontamination procedure from that point.
- D. When the area is visually determined to be clean and dry, post removal air sampling shall be performed.
- E. During inspection time allow HEPA-equipped air filtration units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of Work Areas during this period. Maintain Pressure Differential System in operation for the entire period.
- F. The polyethylene sheeting used to maintain critical barriers between work areas and clean areas such as doorways, windows and air vents shall be sprayed with encapsulant, but not removed until air monitoring is completed and satisfactory results have been received. (Lockback)

3.6 VISUAL INSPECTION:

- A. Temporary lighting: Provide a minimum of 100 foot candles of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand held lights providing 150 foot candles at 4 feet capable of reaching all locations in work area.

- B. Lifts: Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

3.7 FINAL AIR SAMPLING:

- A. After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedures for PCM or TEM set forth in Section 029714 Work Area Clearance:
 - 1. If Release Criteria are not met, repeat Final Cleaning and continue Decontamination Procedure from that point.
 - 2. If Release Criteria are met, proceed to work of this Section on Removal of Work Area Isolation.

3.8 REMOVAL OF WORK AREA ISOLATION:

- A. After all requirements of this section and Section 029714 Work Area Clearance have been met:
 - 1. Shut down and remove the Pressure Differential System. Seal HEPA-equipped air filtration units, HEPA vacuums and similar equipment with 6-mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from Work Area.
 - 2. Remove Personnel Decontamination Unit.
 - 3. Remove the Critical Barriers separating the Work Area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by the Owner's Representative, are found then the entire area affected shall be decontaminated as specified herein.
 - 4. Remove all equipment, materials, and debris from the work site.
 - 5. Dispose of all asbestos-containing waste material as specified in Section 029984 Disposal of Asbestos Containing Waste Material.

3.9 SUBSTANTIAL COMPLETION OF ABATEMENT WORK:

- A. Asbestos Abatement Work is Substantially Complete upon meeting the requirements of this section and Section 029714 Work Area Clearance, including submission of:
 - 1. Certificate of Visual Inspection.
 - 2. Receipts Documenting proper disposal as required by Section 029984 Disposal of Asbestos-Containing Waste Material.
 - 3. Punch list detailing repairs to be made and incomplete items.

END OF SECTION

SECTION 029714

WORK AREA CLEARANCE

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- K. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.
- 4. Visual Inspection: required as a prerequisite of air testing, is set forth in Section 029711 Project Decontamination.
- 5. Air Monitoring: performed by the ENVIRONMENTAL CONSULTANT during abatement work, is described in Section 029410 Test Laboratory Services.

1.2 SUMMARY:

- A. Not in Contract Sum:
 - 1. This section describes work being performed by the ENVIRONMENTAL CONSULTANT. This work is not in the Contract Sum.
 - 2. This Section sets forth required post-abatement airborne asbestos concentrations in the Work Area and describes testing procedures the ENVIRONMENTAL CONSULTANT will use to measure these levels.

1.3 CONTRACTOR RELEASE CRITERIA:

- A. The Asbestos Abatement Work Area is cleared when the Work Area is visually clean and airborne asbestos structure concentrations have been reduced to the level specified below.
 - 1. PCM clearance criteria shall be 0.010 fibers per cubic centimeter (f/cc). or
 - 2. TEM clearance criteria shall be ≤ 70 structures per millimeter squared (S/mm²) average for all collected samples.

1.4 CLEARANCE CRITERIA FAILURE:

- A. Costs associated with the initial round of clearance sampling for each work area are not part of, and shall not be included in the Asbestos Contractor's Contract Sum.
- B. In the event of clearance criteria failure, the Asbestos Contractor shall re-clean the work area in accordance with the specification and as directed by the Asbestos Safety Technician. All re-cleaning activities shall be performed at the Asbestos Contractor's expense. Additionally, all costs associated with subsequent clearance testing shall be deducted from the Asbestos Contractor's Contract Sum. The unit price schedule for air monitoring and analytical services are as follows:
 - AST Labor - \$95.00/hour
 - PCM Sample - \$20.00/sample
 - TEM Sample - \$85.00/sample

1.5 VISUAL INSPECTION:

- A. Work of this Section will not begin until the visual inspection described in Section 029711 Project Decontamination is complete and has been certified by the Project Administrator.

1.6 AIR MONITORING:

- A. To determine if the elevated airborne asbestos structure concentration encountered during

abatement operations has been reduced to the specified level, the ENVIRONMENTAL CONSULTANT will secure samples and analyze them according to the following procedures:

1. PCM samples will be secured and analyzed as indicated below.
2. Transmission Electron Microscopy will be performed using the analysis methodology set forth in the AHERA regulation 40 CFR Part 763 Appendix A, SUBPART E.
3. Work Area Clearance: upon meeting the PCM Clearance or TEM Clearance requirements noted in 1.3 above, the work of Section 029711 Project Decontamination can continue.

1.7 SCHEDULE OF AIR SAMPLES:

- A. General: The number and volume of air samples taken and analytical methods used by the ENVIRONMENTAL CONSULTANT will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used and site conditions.

1.8 LABORATORY TESTING:

- A. PHASE CONTRAST MICROSCOPY: The services of a testing laboratory will be employed by the ENVIRONMENTAL CONSULTANT to perform laboratory analysis of the air samples. A microscope and technician may be set up at the job site, or samples will be sent by courier, so that verbal reports on daily air samples can be obtained within 24 hours. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the ENVIRONMENTAL CONSULTANT, the Owner and the Contractor.
- B. TRANSMISSION ELECTRON MICROSCOPY: The services of a testing laboratory will be employed by the ENVIRONMENTAL CONSULTANT to perform laboratory analysis of the clearance air samples. Samples will be transported or sent by overnight mail, so that verbal reports on clearance air samples can be obtained within 24 hours. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the ENVIRONMENTAL CONSULTANT, the Owner and the Contractor.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 029981

REMOVAL OF ASBESTOS-CONTAINING MATERIAL

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- L. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Installation of Critical and Primary Barriers, and Work Area Isolation Procedures are set forth in Section 029526 Temporary Enclosures.
- B. Project Decontamination procedures after removal of the Secondary Barrier are specified in Section 029711 Project Decontamination.
- C. Disposal of asbestos-containing waste is specified in Section 029984 Disposal of Asbestos-Containing Waste Material.

1.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
 - 6. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.
 - 7. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.
 - 8. NESHAP Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet Asbestos-Containing Materials to which it is applied as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).
 - 9. Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material and solvent proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 PRODUCTS

- A. Wetting Materials: For wetting prior to disturbance of Asbestos-Containing Materials use either amended water or a removal encapsulant:
 - 1. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
 - 2. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of Asbestos-Containing Material. Use a material which results in wetting of the

- Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50% polyoxyethylene ester and 50% polyoxyethylene ether in five gallons of water.
- B. Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.
 - C. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
 - D. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
 - E. Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 029984 Disposal of Asbestos-containing Waste Material.
 - F. Fiberboard Drums: Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.
 - G. Paper board Boxes: Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

PART 3 EXECUTION

3.1 WORKER PROTECTION:

- A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.2 GENERAL PROCEDURES FOR THE REMOVAL OF ASBESTOS-CONTAINING MATERIALS:

- A. Preparation work for the removal of the identified asbestos-containing materials shall utilize Full Containment with three-stage personnel decontamination units, air filtration units and digital negative air pressure differential monitoring systems as indicated on the contract drawings, and shall be in accordance with N.J.A.C. 5:23-8.15 and N.J.A.C. 5:23-8.19, and shall be performed utilizing respiratory protection and proper Personal Protective Equipment (PPE). Preparation work shall only be deemed to be complete and acceptable following a satisfactory inspection by the Environmental Consultant. Approval to proceed with removal activities shall be required in writing prior to commencing removal activities.
- B. Floor tile and mastic removal shall be accomplished utilizing non-friable methods whenever the tile is undamaged and intact. Non-friable methods shall include the use of heat machines, critical barriers, localized air filtration, flapped doorways and splash guards. A remote three stage personnel decontamination unit(s) shall be established and made operable prior to the removal of any floor tile materials. Should the tile be damaged or become damaged and therefore friable, removal methods shall utilize full containment preparation procedures, pressure differential air filtration and wet methods.
- C. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Where necessary, carefully strip away while simultaneously spraying amended water or removal

encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

- D. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
- E. Asbestos-containing material, removed by hand tools, shall be manually removed by scraping or cutting the saturated material from the base substrate.
- F. Removal of the asbestos material shall be done in small sections by two-person teams, on staging platforms if needed. The wet material from each section shall be packed and sealed into labeled 6-mil polyethylene bags. When possible, one worker shall remove and hand sections of asbestos material to the other worker who shall then place the material into labeled 6-mil polyethylene bags.
- G. Asbestos-containing and asbestos-contaminated materials located more than ten (10) feet above the floor shall be dropped into dust free enclosed inclined chutes, or dropped onto scaffolding, or containerized at that height for eventual disposal. Maximum inclination for chutes shall not exceed 60 degrees from horizontal. Asbestos-containing materials shall not be dropped or thrown to the floor from more than ten (10) feet. Asbestos-containing materials shall be handled carefully. No asbestos is permitted to drop directly to the floor. Any unnecessary agitation of the material is strictly prohibited.
- H. All asbestos-containing and asbestos-contaminated materials shall be removed. The Contractor shall take care that all asbestos has been removed from fasteners, channels of support systems, construction blocks, ductwork and piping, and all other hard to reach places.
- I. As a method of organizing the asbestos removal work, workers shall begin working on the areas nearest to the decontamination unit and work toward the air filtration units.
- J. Operations shall be continuous so that once an area is started it shall be worked on to the first wet wipe. The wet material from each section shall be packed and sealed into labeled 6-mil polyethylene bags and double bagged with visible labels prior to starting the next section. Water-soaked fallen material shall be picked up while wet to prevent water loss due to evaporation.
- K. Maintain good housekeeping so as not to accumulate loose asbestos.
- L. Reach the clean wipe state as quickly as possible.
- M. Remove the residues as quickly as possible so as not to walk or track through it, thus grinding it to smaller, more potentially dangerous sizes.
- N. Place the asbestos into labeled 6-mil polyethylene bags as quickly as possible so as not to allow asbestos to dry out and become airborne. Bags shall be handed down or chuted down carefully from one worker to another.
- O. Contaminated material containing sharp edged items shall be cut to size while adequately wet, placed in small cardboard boxes or burlap bags and then double bagged, or alternatively double bagged and then placed within 6-mil lined fiber drums, the integrity of which is the Contractor's responsibility.
- P. Bags/drums shall be marked with the labels prescribed by 40 CFR Part 61 Section 61.150 of the EPA regulations. The outside of all containers shall be wet cleaned or HEPA vacuumed before leaving the work area.
- Q. After removal, the underlying material shall be brushed with a stiff, nylon bristle brush. Wire brushes are not permitted; asbestos fiber bundles break into smaller more hazardous fiber sizes when a wire brush is utilized. After the material is brushed, it shall be wet wiped with amended water. Only 100% removal will be accepted.

END OF SECTION

SECTION 029984

DISPOSAL OF ASBESTOS-CONTAINING WASTE

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- M. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.
- N. Section 02992 Codes and Regulations - Asbestos Abatement describes applicable federal, state and local regulations.

1.2 DESCRIPTION OF THE WORK:

- A. This section describes the disposal of Asbestos-Containing Materials. Disposal includes proper packaging of asbestos-containing waste materials.

1.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the ENVIRONMENTAL CONSULTANT for review. Do not start work until these submittals are approved by the ENVIRONMENTAL CONSULTANT.
 - 10. Copy of state or local license for waste hauler.
 - 11. Name and address of landfill where non-friable and friable asbestos-containing waste materials are to be buried. Include contact person and telephone number.
 - 12. Chain of Custody form and form of waste manifest proposed.
 - 13. Sample of disposal bag and any added labels to be used.
- B. Submit copies of all manifests and disposal site receipts to the ENVIRONMENTAL CONSULTANT on a weekly basis.

PART 2 PRODUCTS

2.1 Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled with four labels with text as follows:

- A. First Label:

CAUTION: CONTAINS ASBESTOS FIBERS
AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

- B. Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication Standard:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

- C. Third Label: Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule. Published November 21, 1986 and revised February 17, 1987:

RQ HAZARDOUS
SUBSTANCE
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

- D. Fourth Label: Provide in accordance with 40 CFR Part 61 Asbestos NESHAP revision; Final Rule dated November 20, 1990.

The College of New Jersey
2000 Pennington Road
Ewing, New Jersey 08614

PART 3 EXECUTION

3.1 GENERAL:

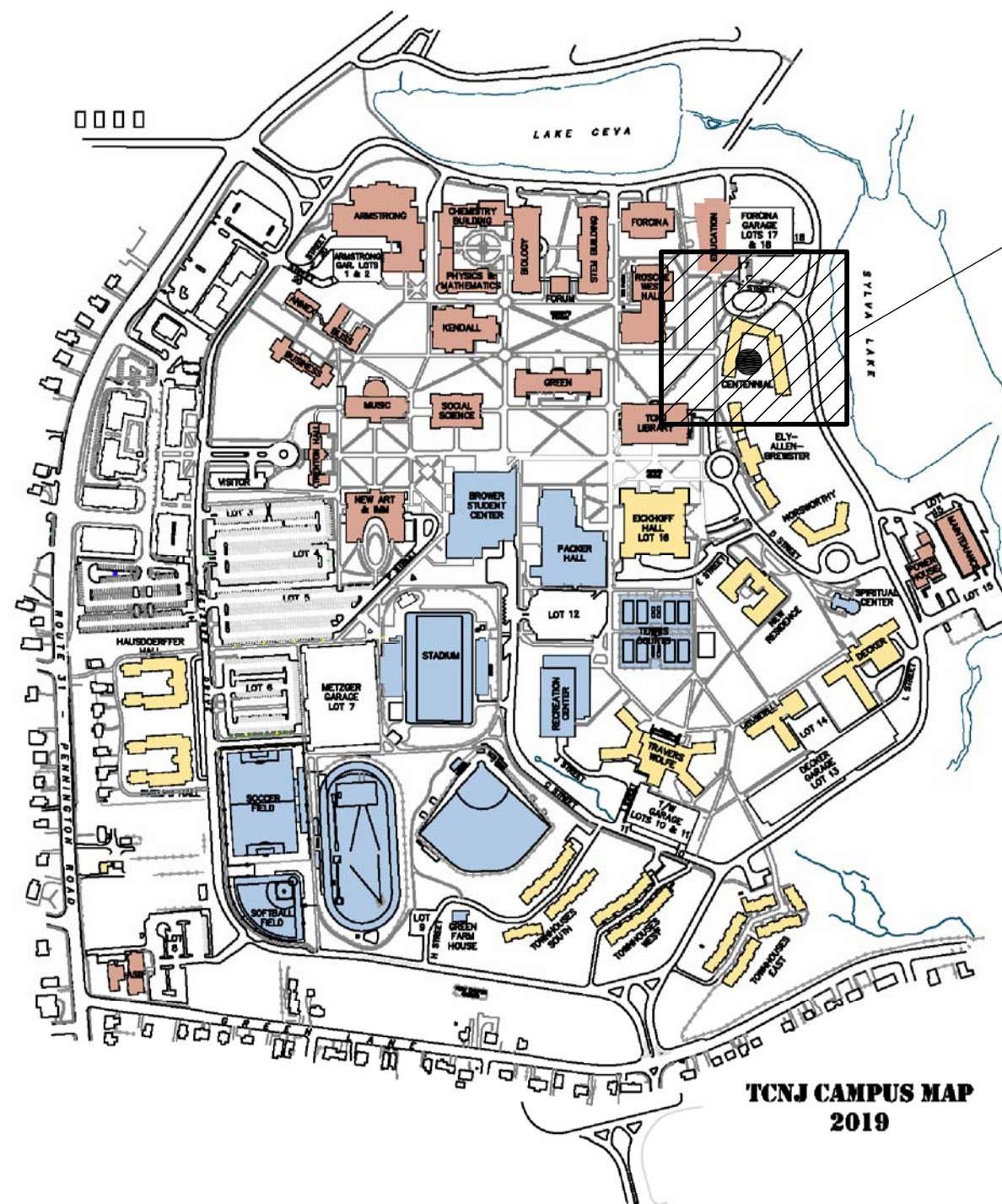
- A. The transportation and disposal of non-friable and friable asbestos-containing materials shall be performed in strict accordance with New Jersey Department of Environmental Protection Regulations (N.J.S.A. 7:26).
- B. Comply with the following sections during all phases of this work:
1. Section 029560 Worker Protection - Asbestos Abatement.
 2. Section 029562 Respiratory Protection.
- C. All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.
- D. Load out of waste material shall occur at times of least occupancy of the buildings. Load all asbestos-containing waste material in disposal bags or leak-tight drums. All materials are to be contained in one of the following:
1. Two 6 mil disposal bags.
 2. Two 6 mil disposal bags and a fiberboard drum.
- E. Protect interior of truck or dumpster with 6 mil polyethylene sheeting.
- F. Carefully load containerized waste into fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.
- G. Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to a sealed truck or dumpster.
- H. Do not transport disposal bagged materials on open trucks. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this specification.
- I. Advise the landfill operator or processor, at least ten days in advance of transport, and the quantity of material to be delivered.

- J. At a disposal site unload containerized waste. Sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for re-bagging. Clean and decontaminate entire truck and contents.
- K. Retain receipts from landfill or processor for all disposed materials.
- L. At completion of hauling and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to the ENVIRONMENTAL CONSULTANT.

END OF SECTION

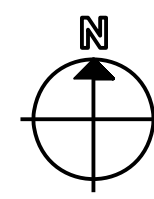


CENTENNIAL HALL - PARTIAL AIR CONDITIONING

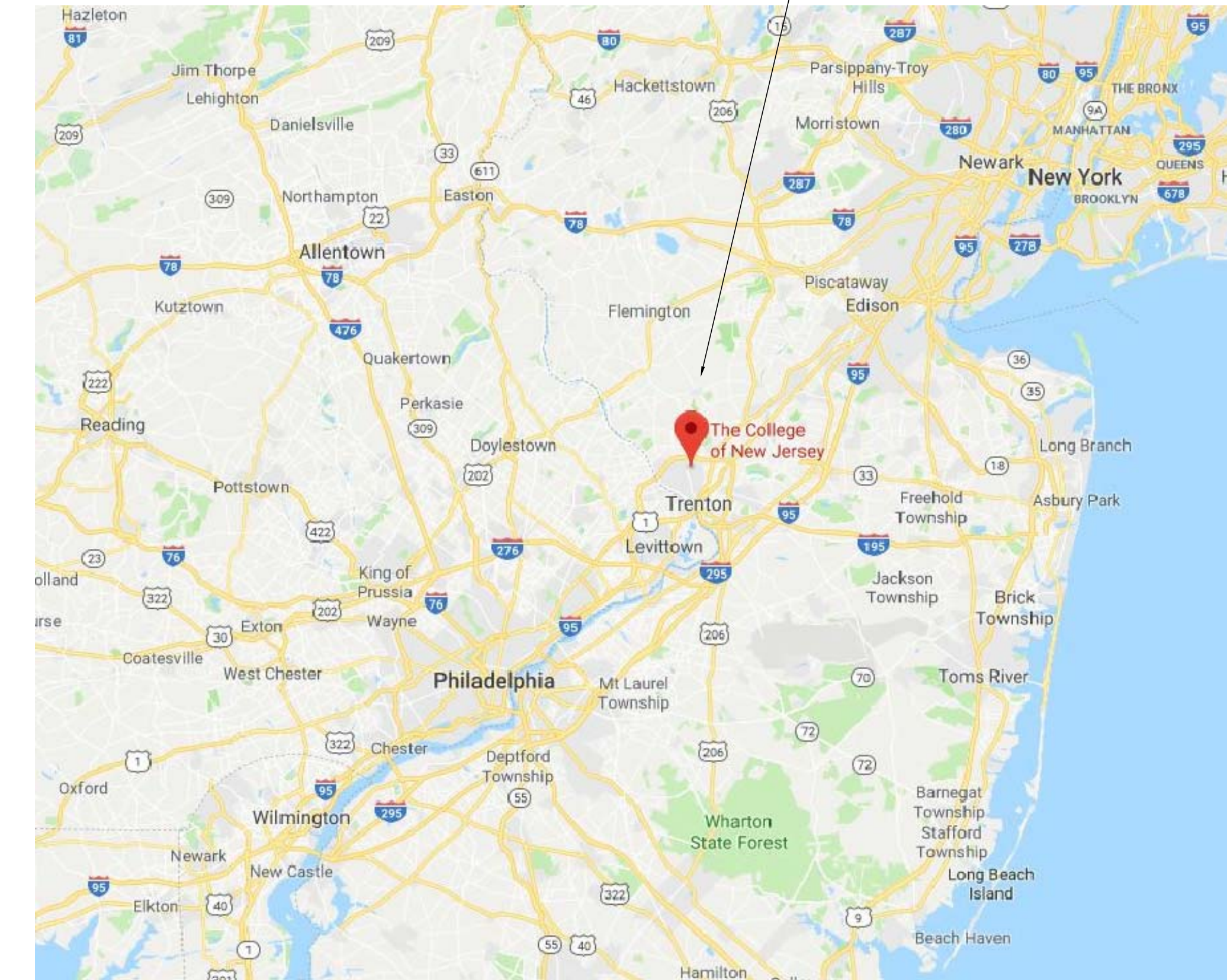


PROJECT SITE

PROJECT SITE MAP
NO SCALE

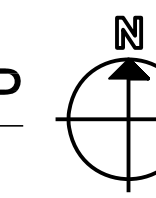


DRAWING INDEX				
DWG. NO.	DRAWING DESCRIPTION/TITLE	DCA REVIEW SET	100 % C/D SET	
G-101	GENERAL - COVER SHEET	x	x	
ME-101	MECHANICAL AND ELECTRICAL - EAST WING FIRST FLOOR PLAN	x	x	
ME-102	MECHANICAL AND ELECTRICAL - WEST WING SECOND FLOOR PLAN	x	x	
ME-103	MECHANICAL AND ELECTRICAL - EAST WING ROOF PLAN	x	x	
ME-104	MECHANICAL AND ELECTRICAL - WEST WING ROOF PLAN	x	x	
ME-401	MECHANICAL AND ELECTRICAL - ELEVATIONS AND DETAILS	x	x	
ME-601	MECHANICAL AND ELECTRICAL - ONE-LINE DIAGRAM AND PANEL SCHEDULES	x	x	
ME-701	MECHANICAL AND ELECTRICAL - NOTES, LEGEND, ABBREVIATIONS, SCHEDULES AND SPECIFICATIONS	x	x	
ASB-1	ACM ABATEMENT AREA - THIRD FLOOR - BASE AND ALTERNATE AREAS		x	
ASB-2	ACM ABATEMENT AREA - SECOND FLOOR - BASE AND ALTERNATE AREAS		x	
ASB-3	ACM ABATEMENT AREA - EXTERIOR PENETRATIONS		x	



PROJECT LOCATION

PROJECT LOCATION MAP
NO SCALE



CODE INFORMATION

PROJECT NAME: CENTENNIAL HALL - PARTIAL AIR-CONDITIONING
 PROJECT ADDRESS: THE COLLEGE OF NEW JERSEY
 2000 PENNINGTON RD.
 EWING, NJ 08628
 OWNERS AGENT: THE COLLEGE OF NEW JERSEY, LYNDA ROTHERMEL
 3200 PENNINGTON ROAD
 EWING, NJ 08628
 PHONE 609 771 3330
 EMAIL ROTHERME@TCNJ.EDU
 DESIGN PROFESS.: STUART HEISEY, PE, NJ LIC. NO. 24GE05311700
 ENTECH ENGINEERING, INC.
 201 PENN ST.
 PO BOX 32
 READING, PA 19603
 PHONE 610-373-6667, EXT 1199
 EMAIL SHEISEY@ENTECHENG.COM
 MECHANICAL NJAC 5:23-3.20, IMC/2018
 ELECTRICAL NJAC 5:23-3.16, NEC/2017
 PLUMBING NJAC 5:23-3.15, NSPC/2018
 USE GROUP R-2 - RESIDENTIAL, MULTIFAMILY
 GROSS AREA 49668 SQ. FT.
 NUMBER OF STORIES 3
 MAXIMUM HEIGHT 30 FT.
 CONSTRUCT. TYPE IB

PROJECT NOTES

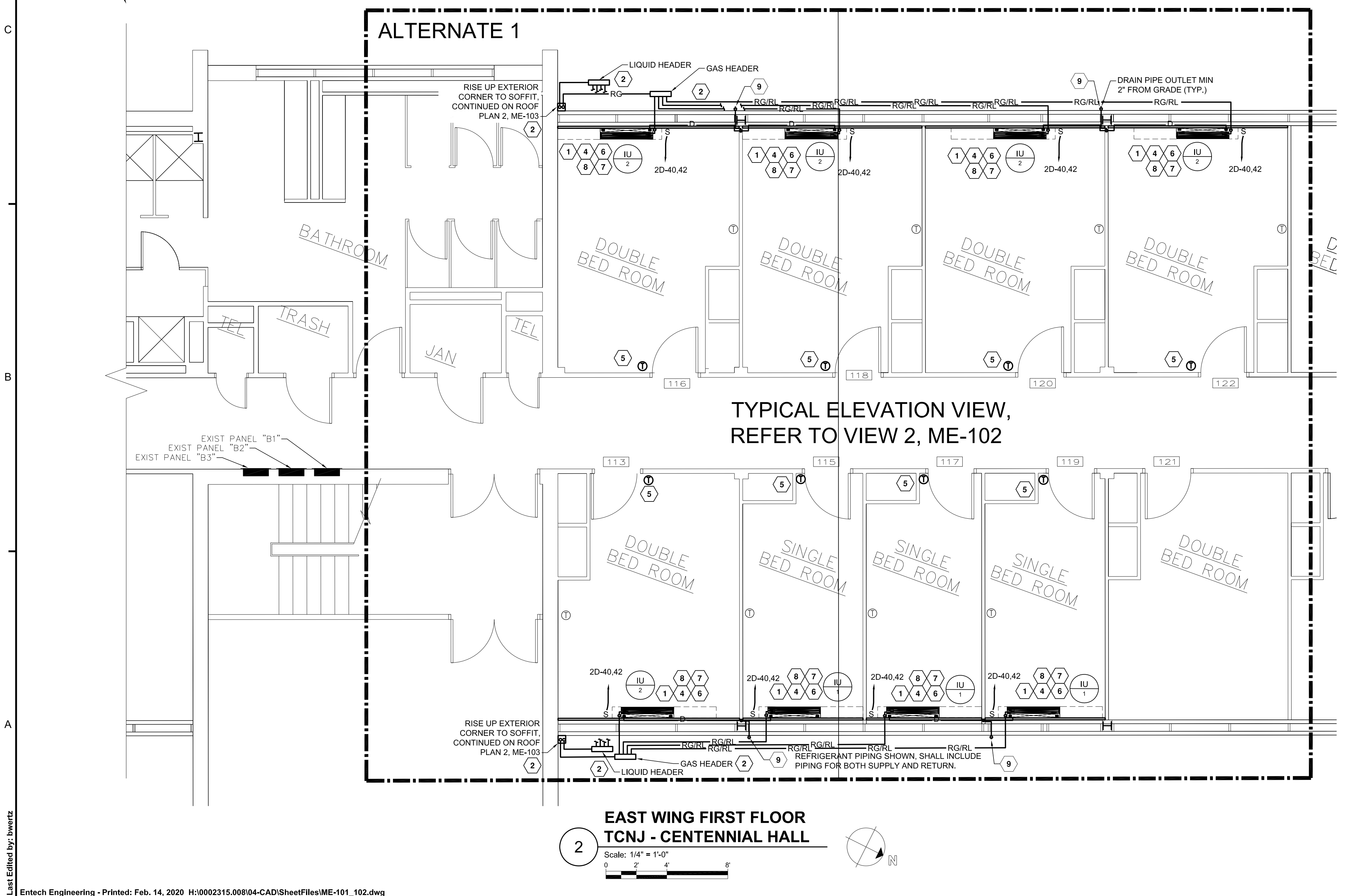
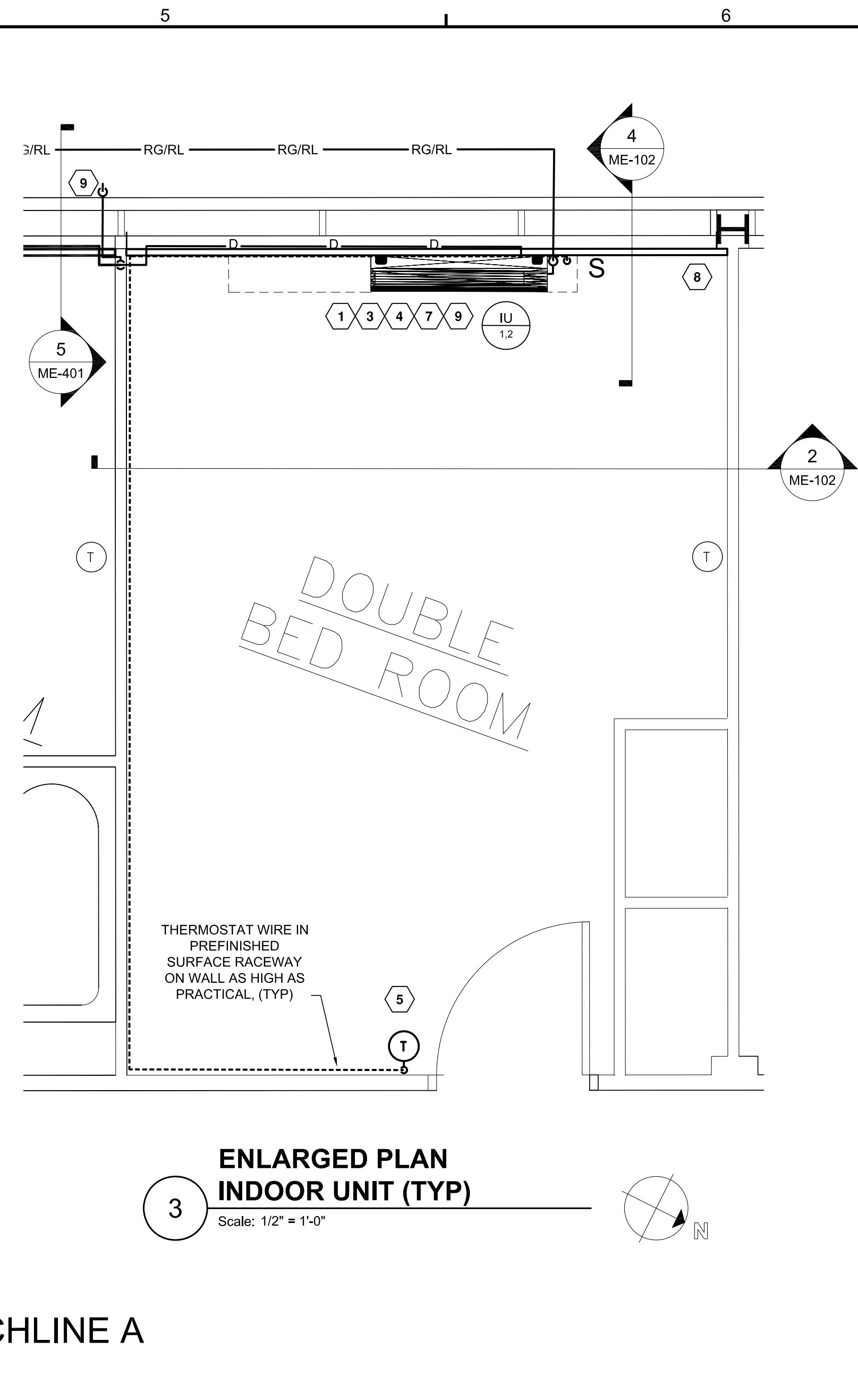
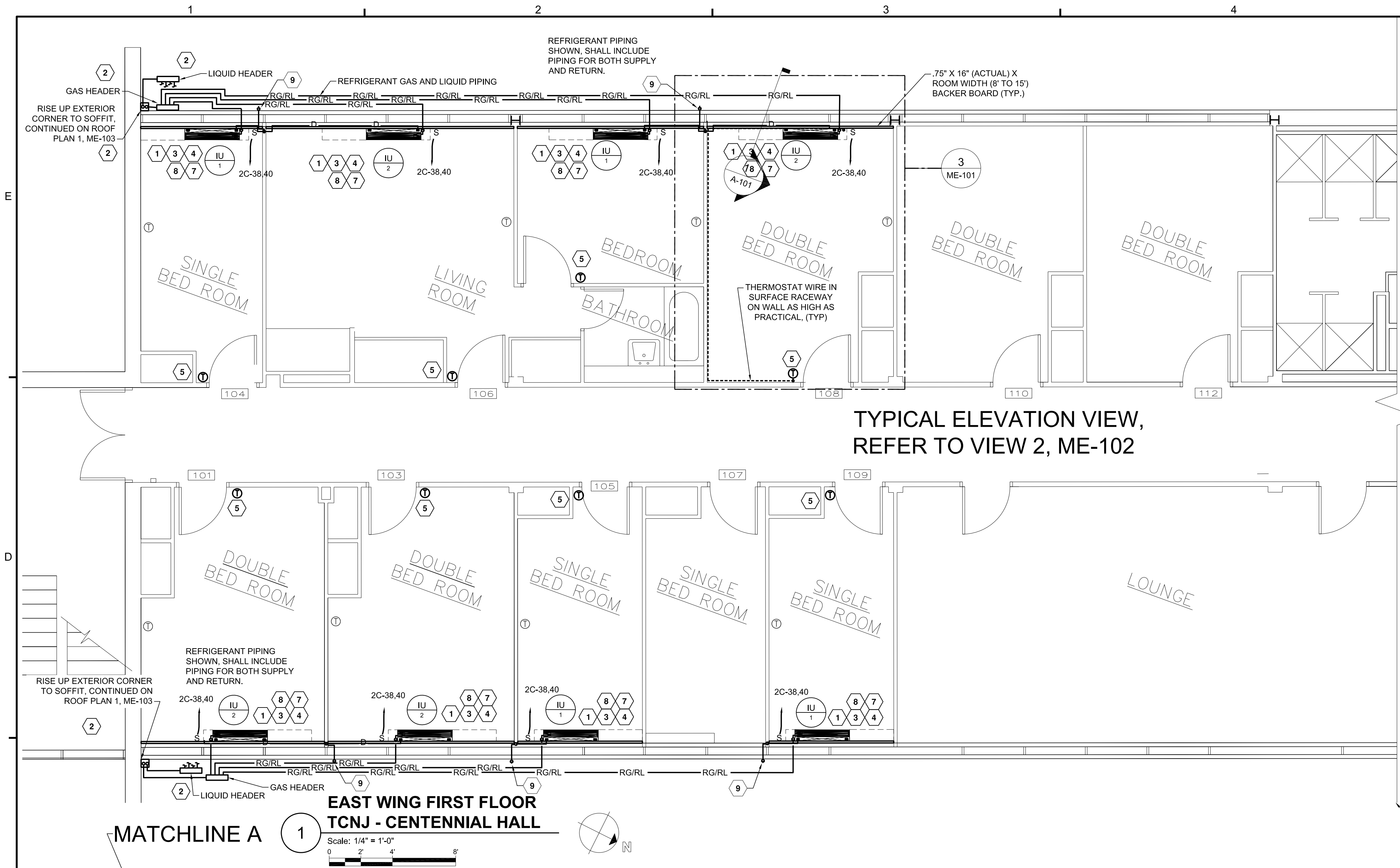
BASE BID SHALL INCLUDE ALL WORK NOT INCLUDED IN ALTERNATE #1 AND ALTERNATE #2 SCOPE. ALTERNATE 1 AND 2 SCOPES OF WORK ARE INDICATED BY AREA OF WORK BOUNDARIES AND INCLUDE ALL WORK SHOWN WITHIN THE BOUNDARY UNLESS NOTED OTHERWISE.
 PROVIDE SEPARATE BIDS FOR BASE SCOPE, ALTERNATE #1 AND ALTERNATE #2 (BASE, BASE-ALT#1, BASE-ALT#2 AND BASE-ALT#1+ALT#2). ASSUME ALTERNATE SCOPE(S) SHALL BE COMPLETED ALONG WITH BASE SCOPE.



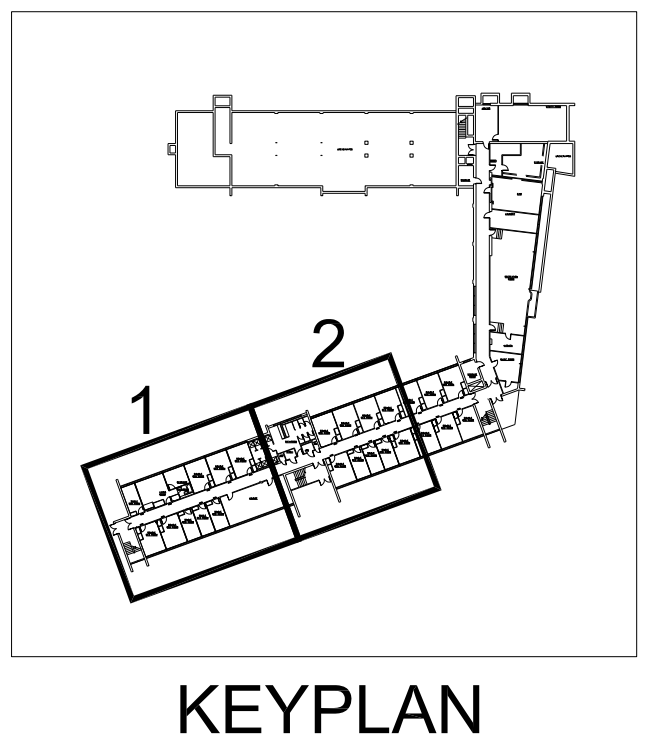
THE COLLEGE OF NEW JERSEY
 EWING, NJ 08628
 CENTENNIAL HALL - PARTIAL AIR CONDITIONING
 GENERAL COVER SHEET

SCALE: AS NOTED
 PREPARED BY: BLW
 CHECKED BY: CS
 APPROVED BY: SJH
 PROJECT NO: 2315.008
 DRAWING NO:

G-101



- ### GENERAL SHEET NOTES
- REFER TO DRAWING ME-701 FOR GENERAL, MECHANICAL AND ELECTRICAL NOTES.
 - REFER TO DRAWING ME-701 FOR THE LEGEND AND ABBREVIATIONS.
 - FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
 - FOR SPECIFICATIONS, EQUIPMENT AND MATERIAL DESCRIPTIONS REFER TO ME-701.
 - FOR ELECTRIC PANEL SCHEDULES, REFER TO ME-601.
- ### SHEET KEYNOTES
- PROVIDE INSULATED REFRIGERANT LINE SETS FROM IU TO HEADER, LOCATE HEADER IN VERTICAL CHASE. PROVIDE EXTERIOR HORIZONTAL PIPE ENCLOSURE WITH PIPE SUPPORTS, FOR DETAILS REFER TO DRAWING ME-401.
 - PROVIDE INSULATED REFRIGERANT LINE SETS FROM HEADER TO CU ON ROOF. LOCATE HEADER IN VERTICAL CHASE. PROVIDE EXTERIOR VERTICAL PIPE ENCLOSURE WITH PIPE SUPPORTS, UP TO SOFFIT, FOR DETAILS REFER TO DRAWING ME-401. VERTICAL CHASE SHALL BE SIZED TO ACCOMMODATE THE REFRIGERANT PIPE HEADERS, PIPING AND CONDUITS, SIZED AS SMALL AS REQUIRED FOR COMPONENTS, MINIMUM SIZE 14"W X 6" D. FASTEN PIPE ENCLOSURE AND PIPE SUPPORTS TO BRICK WALL USING STAINLESS STEEL OR ALUMINUM FASTENERS SUITED FOR THE EXTERIOR BRICK AND WEIGHT OF ENCLOSURE.
 - PROVIDE BRANCH CIRCUIT WIRING, 2#12 AND 1#12 GND IN 3/4" CONDUIT AND SURFACE WIREWAY, FROM INDOOR UNITS TO PANEL "20" LOCATED ON 3RD FLOOR. PROVIDE 2-POLE TOGGLE SWITCH FOR EACH INDOOR UNIT. IN SINGLE GANG SURFACE MOUNTED BOX WIREMOLD, OR APPROVED EQUAL, ROUTE CONDUIT UP TO FLOOR ABOVE, ENTER FINITUBE ENCLOSURE, ROUTE THROUGH ENCLOSURE TO EXIT EXTERIOR WALL, COORDINATE FLOOR PENETRATIONS WITH REFRIGERANT PIPING LOCATIONS. CONNECT UP TO 8 INDOOR UNITS (8 TYP) ON ONE ELECTRIC CIRCUIT. PROVIDE 15A, 2-POLE CIRCUIT BREAKER, IN EXISTING BREAKER PANEL "20". USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. CONNECT UP TO 8 INDOOR UNITS TO ONE CIRCUIT BREAKER.
 - PROVIDE CONTROL WIRING FROM INDOOR UNITS TO CONDENSING UNIT, ROUTE WITH REFRIGERANT PIPING. PROVIDE 2-CORE, AWG16, SHIELDED WIRE IN 3/4" CONDUIT. ADJACENT INDOOR UNITS SHALL HAVE CONTROL WIRING BETWEEN ADJACENT INDOOR UNITS INTERCONNECTED (Daisy Chain).
 - PROVIDE WIRED THERMOSTAT, MOUNT NEXT TO EXISTING LIGHT SWITCH ADJACENT TO DOOR, 48" A.F.F. PROVIDE 2-CORE, AWG20, SHIELDED WIRE IN 1/2" SURFACE WIREWAY. ROUTE WIREWAY FROM THERMOSTAT, UP WALL TO CEILING OR CHASE AND ROUTE ON WALL TO UNIT. COORDINATE THERMOSTAT WIRE ROUTE WITH REFRIGERANT PIPE PENETRATIONS AND OTHER OBSTACLES IN ROOM, TYP. ALL INDOOR UNITS.
 - PROVIDE BRANCH CIRCUIT WIRING, 2#12 AND 1#12 GND IN 3/4" CONDUIT AND SURFACE WIREWAY, FROM INDOOR UNITS TO PANEL "20" LOCATED ON 3RD FLOOR. PROVIDE 2-POLE TOGGLE SWITCH FOR EACH INDOOR UNIT. IN SINGLE GANG SURFACE MOUNTED BOX WIREMOLD, OR APPROVED EQUAL, ROUTE CONDUIT UP TO FLOOR ABOVE, ENTER FINITUBE ENCLOSURE, ROUTE THROUGH ENCLOSURE TO EXIT EXTERIOR WALL, COORDINATE FLOOR PENETRATIONS WITH REFRIGERANT PIPING LOCATIONS. CONNECT UP TO 8 INDOOR UNITS (8 TYP) ON ONE ELECTRIC CIRCUIT. PROVIDE 15A, 2-POLE CIRCUIT BREAKER, IN EXISTING BREAKER PANEL "20". USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. CONNECT UP TO 8 INDOOR UNITS TO ONE CIRCUIT BREAKER.
 - PROVIDE SURFACE MOUNTED ENCLOSURE FOR REFRIGERANT PIPING AND ELECTRICAL WIRING FROM INTERIOR UNIT TO CEILING, TYP. ALL INDOOR UNITS.
 - PROVIDE PLYWOOD BACKER BOARD, 3/4" D X 15" X WIDTH OF ROOM, FASTEN TO EXISTING MULLION WALL ABOVE WINDOW, ATTACH IU TO BACKER BOARD AND MULLION WALL, WHERE POSSIBLE. PROVIDE METALLIC BRACING ON LOWER, REAR SURFACE OF BACKER BOARD, AFFIXED FROM BACKER BOARD TO METAL WINDOW FRAME. PAINT BACKER BOARD ALL SIDES, TO MATCH EXISTING WALL COLOR. COORDINATE COLOR WITH OWNER. MOUNT INDOOR UNIT TOP MINIMUM 2" FROM CEILING, REFER TO MANUFACTURERS CLEARANCES, REFER TO DETAIL 3, ME-102.
 - PROVIDE PVC DRAIN PIPING FROM IU TO GRADE, ROUTE PIPING IN EXISTING WALL CHASE AS INDICATED. ROUTE THROUGH FINITUBE RADIATION ENCLOSURE AND EXIT EXTERIOR WALL. COMBINE ADJACENT IU DRAINS, WHERE PRACTICAL. PROVIDE MEANS OF CLEANOUT (E.G. CLEANOUTS, UNIONS), PROVIDE 1/4" PER FOOT SLOPE. MINIMUM DRAIN PIPING TERMINATION SHALL BE 2" FROM GRADE. MINIMUM PAINT EXPOSED PVC DRAIN PIPE INTERIOR AND EXTERIOR, COLOR TO MATCH ADJACENT WALL COLOR. COORDINATE PAINT COLOR WITH OWNER PRIOR TO PAINTING.



1.800.825.1372
www.entech.com

REV	DATE	ISSUED FOR	BY
0	02-14-2020	ISSUED FOR BID	SJH

THE COLLEGE OF NEW JERSEY
EWING, NJ 08628
CENTENNIAL HALL - PARTIAL AIR CONDITIONING
MECHANICAL-ELECTRICAL
EAST WING FIRST FLOOR PLAN

SCALE: AS NOTED
PREPARED BY: BLW
CHECKED BY: CSJ
APPROVED BY: SJH
PROJECT NO.: 2315.008
DATE: 02/14/2020

ME-101

GENERAL SHEET NOTES

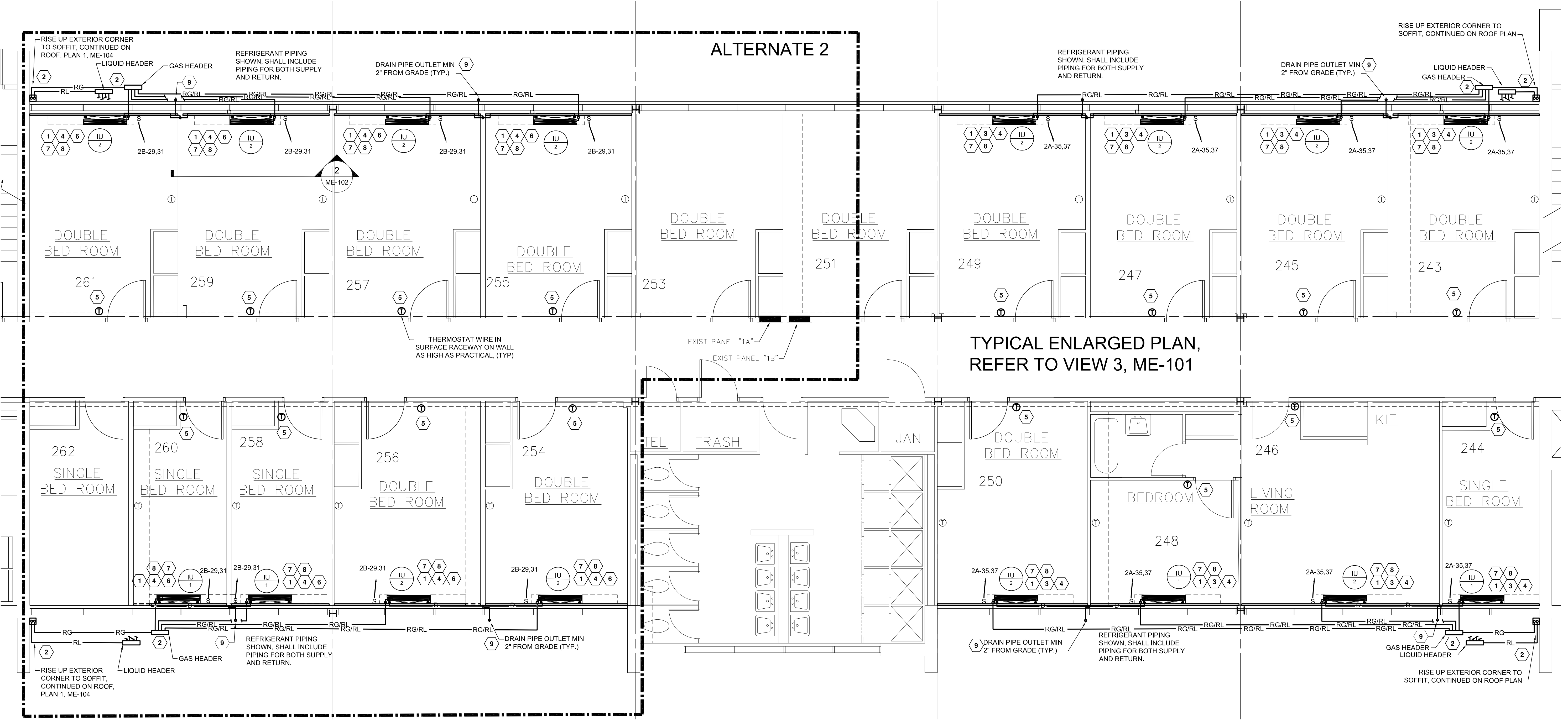
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- REFER TO DRAWING ME-701 FOR THE LEGEND AND ABBREVIATIONS.
- FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
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- FOR ELECTRIC PANEL SCHEDULES, REFER TO ME-601

SHEET KEYNOTES

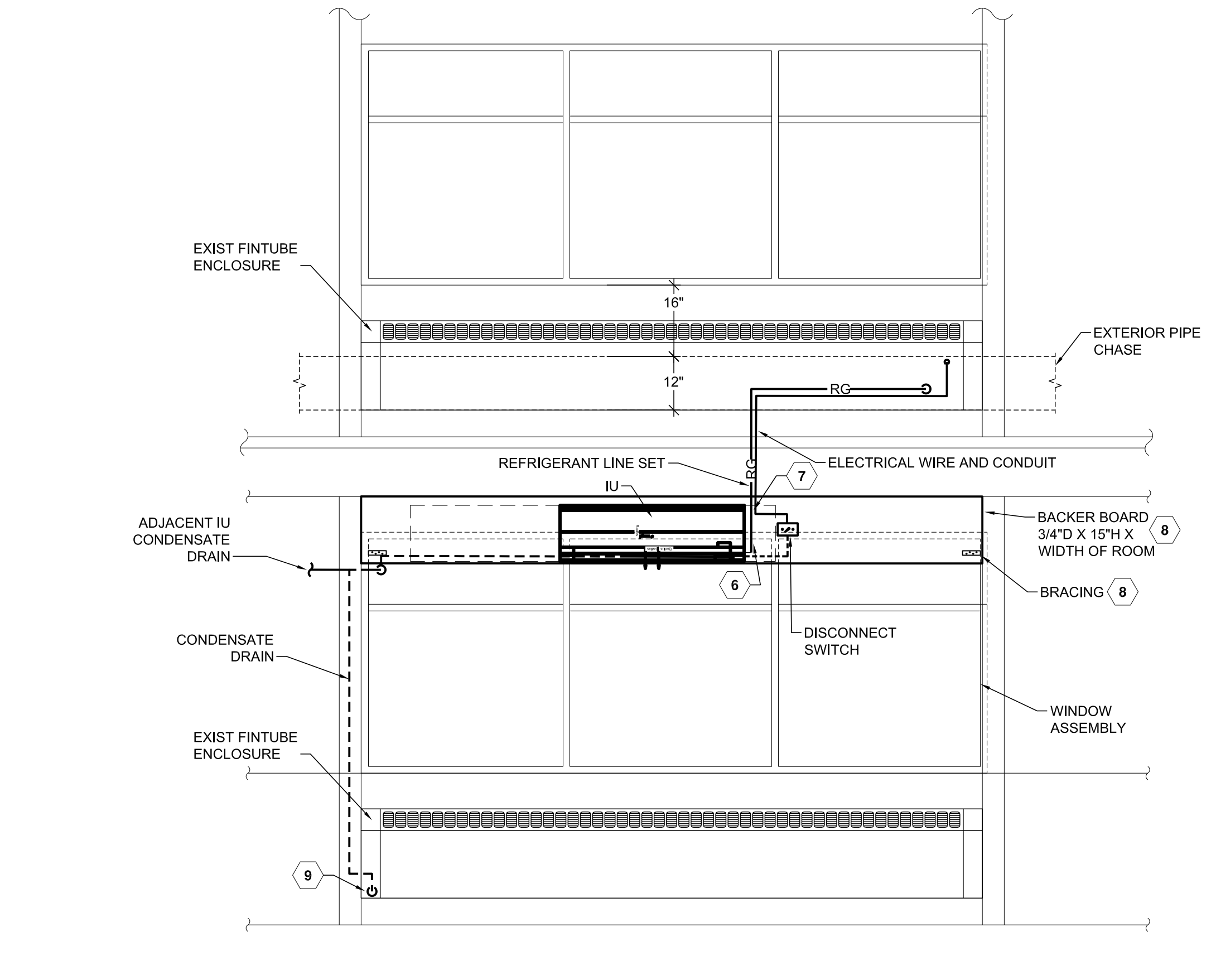
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- PROVIDE BRANCH CIRCUIT WIRING, 2#12 AND 1#12 GND IN 3/4" CONDUIT FROM INDOOR UNIT TO PANEL "2A", LOCATED ON 3RD FLOOR. PROVIDE 2-POLE TOGGLE SWITCH FOR EACH INDOOR UNIT. IN SINGLE GANG SURFACE MOUNTED BOX, WIREMOLD, OR APPROVED EQUAL. ROUTE RACEWAY UP TO FLOOR ABOVE. ENTER FINITUBE ENCLOSURE, ROUTE THROUGH ENCLOSURE TO EXIT EXTERIOR WALL. PROVIDE 3/4" CONDUIT FROM WIREMOLD TO EXTERIOR OF BUILDING. COORDINATE FLOOR PENETRATIONS WITH REFRIGERANT PIPING LOCATIONS. CONNECT UP TO 8 INDOOR UNITS (IU) ON ONE ELECTRIC CIRCUIT. PROVIDE 15A, 2-POLE, CIRCUIT BREAKER, IN EXISTING BREAKER PANEL "2A", LOCATED ON 3RD FLOOR. USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. CONNECT UP TO 8 INDOOR UNITS TO ONE CIRCUIT BREAKER.
- PROVIDE CONTROL WIRING FROM INDOOR UNIT TO CONDENSING UNIT. ROUTE WITH REFRIGERANT PIPING. PROVIDE 2-CORE, AWG18, SHIELDED WIRE IN 3/4" CONDUIT. ADJACENT INDOOR UNITS SHALL HAVE CONTROL WIRING BETWEEN ADJACENT INDOOR UNITS INTERCONNECTED (DAISY CHAIN).
- PROVIDE WIRED THERMOSTAT, MOUNT NEXT TO EXISTING LIGHT SWITCH ADJACENT TO DOOR, 4" A.F.F. PROVIDE 2-CORE, AWG20, SHIELDED WIRE IN 1/2" SURFACE WIREWAY. ROUTE WIREWAY FROM THERMOSTAT, UP WALL TO CEILING OR CHASE AND ROUTE ON WALL TO UNIT. COORDINATE THERMOSTAT WIRE ROUTE WITH REFRIGERANT PIPE PENETRATIONS AND OTHER OBSTACLES IN ROOM. TYP ALL INDOOR UNITS.
- PROVIDE BRANCH CIRCUIT WIRING, 2#12 AND 1#12 GND IN 3/4" CONDUIT AND SURFACE WIREWAY. FROM INDOOR UNITS TO PANEL "2B", LOCATED ON 3RD FLOOR. PROVIDE 2-POLE TOGGLE SWITCH FOR EACH INDOOR UNIT. IN SINGLE GANG SURFACE MOUNTED BOX, WIREMOLD, OR APPROVED EQUAL. ROUTE RACEWAY UP TO FLOOR ABOVE. ENTER FINITUBE ENCLOSURE, ROUTE THROUGH ENCLOSURE TO EXIT EXTERIOR WALL. PROVIDE 3/4" CONDUIT FROM WIREMOLD TO EXTERIOR OF BUILDING. COORDINATE FLOOR PENETRATIONS WITH REFRIGERANT PIPING LOCATIONS. CONNECT UP TO 8 INDOOR UNITS (8 TYP) ON ONE ELECTRIC CIRCUIT. PROVIDE 15A, 2-POLE, CIRCUIT BREAKER, IN EXISTING BREAKER PANEL "2B", USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. CONNECT UP TO 8 INDOOR UNITS TO ONE CIRCUIT BREAKER.
- PROVIDE SURFACE MOUNTED ENCLOSURE FOR REFRIGERANT PIPING AND ELECTRICAL WIRING FROM INTERIOR UNIT TO CEILING. TYP ALL INDOOR UNITS.
- PROVIDE PLYWOOD BACKER BOARD, 3/4" X 15" X WIDTH OF ROOM. FASTEN TO EXISTING MULLION WALL ABOVE WINDOW. ATTACH IU TO BACKER BOARD AND MULLION WALL. WHERE POSSIBLE, PROVIDE METALLIC BRACING ON LOWER, REAR SURFACE OF BACKER BOARD, AFFIXED FROM BACKER BOARD TO METAL WINDOW FRAME. PAINT BACKER BOARD ALL SIDES, TO MATCH EXISTING COLOR. COORDINATE COLOR WITH OWNER. MOUNT INDOOR UNIT TOP MINIMUM 2" FROM CEILING. REFER TO MANUFACTURERS CLEARANCES. REFER TO DETAIL 3, ME-102.
- PROVIDE PVC DRAIN PIPING FROM IU TO GRADE. ROUTE PIPING IN EXISTING WALL CHASE AS INDICATED. ROUTE THROUGH FINITUBE RADIATION ENCLOSURE AND EXIT EXTERIOR WALL. COMBINE ADJACENT IU DRAINS, WHERE PRACTICAL. PROVIDE MEANS OF CLEANOUT (E.G. CLEANOUTS, UNIONS). PROVIDE 1/4" PER FOOT SLOPE. MINIMUM DRAIN PIPING TERMINATION SHALL BE 2" FROM GRADE. MINIMUM PAINT EXPOSED PVC DRAIN PIPE INTERIOR AND EXTERIOR. COLOR TO MATCH ADJACENT WALL COLOR. COORDINATE PAINT COLOR WITH OWNER PRIOR TO PAINTING.



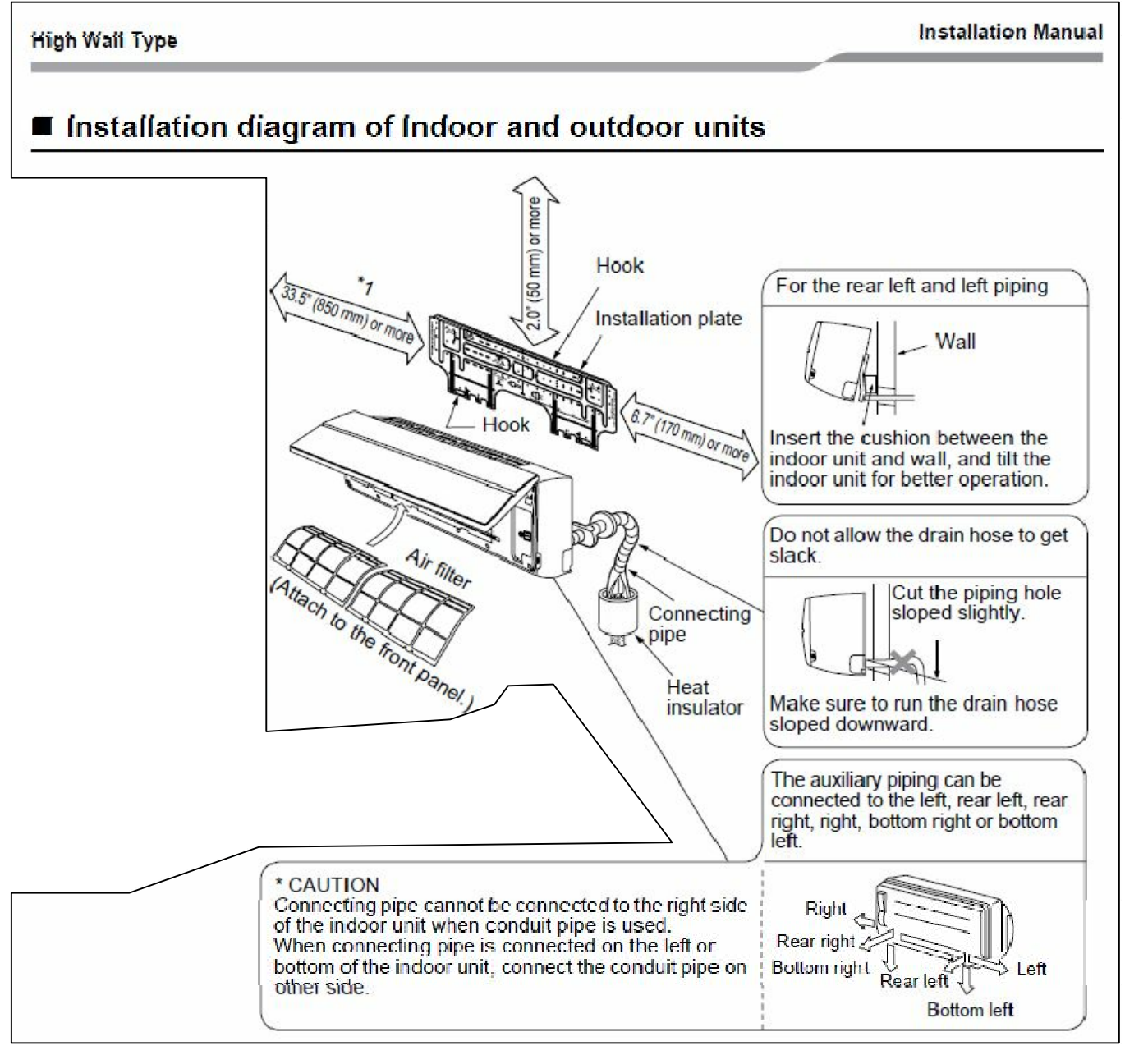
1.800.825.1372
www.entech.com



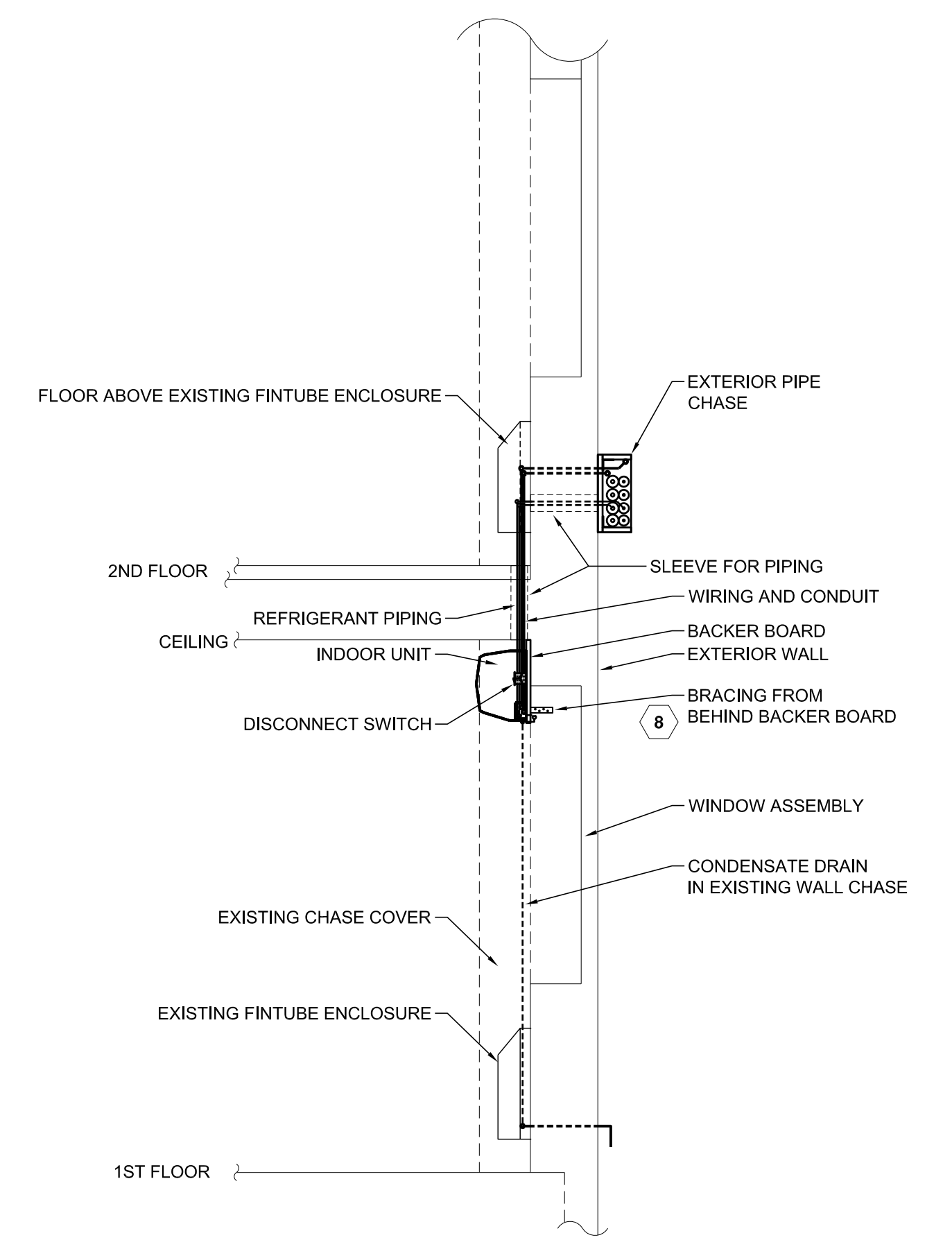
1 WEST WING SECOND FLOOR PLAN TCNJ - CENTENNIAL HALL
Scale: 1/4" = 1'-0"



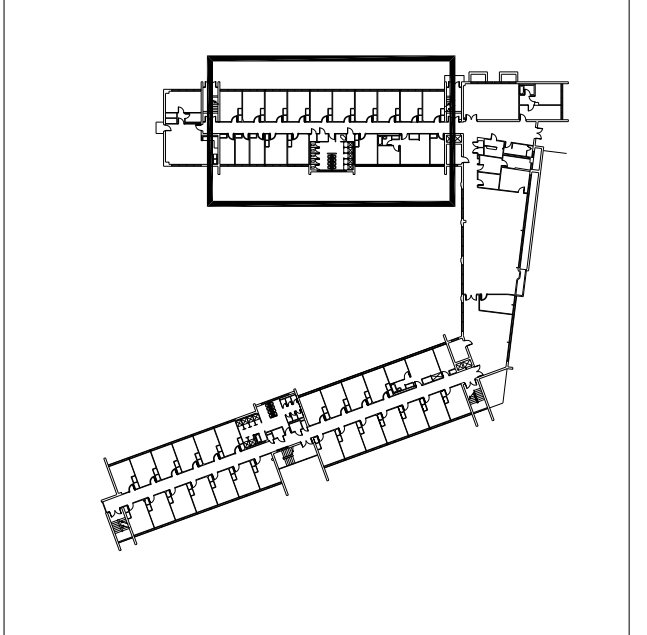
2 TYPICAL INTERIOR ELEVATION VIEW TCNJ - CENTENNIAL HALL
Scale: 1/2" = 1'-0"



3 INDOOR UNIT MOUNTING CLEARANCES
Scale: NO SCALE



4 TYPICAL IU MOUNTING SECTION VIEW TCNJ - CENTENNIAL HALL
Scale: 1/2" = 1'-0"



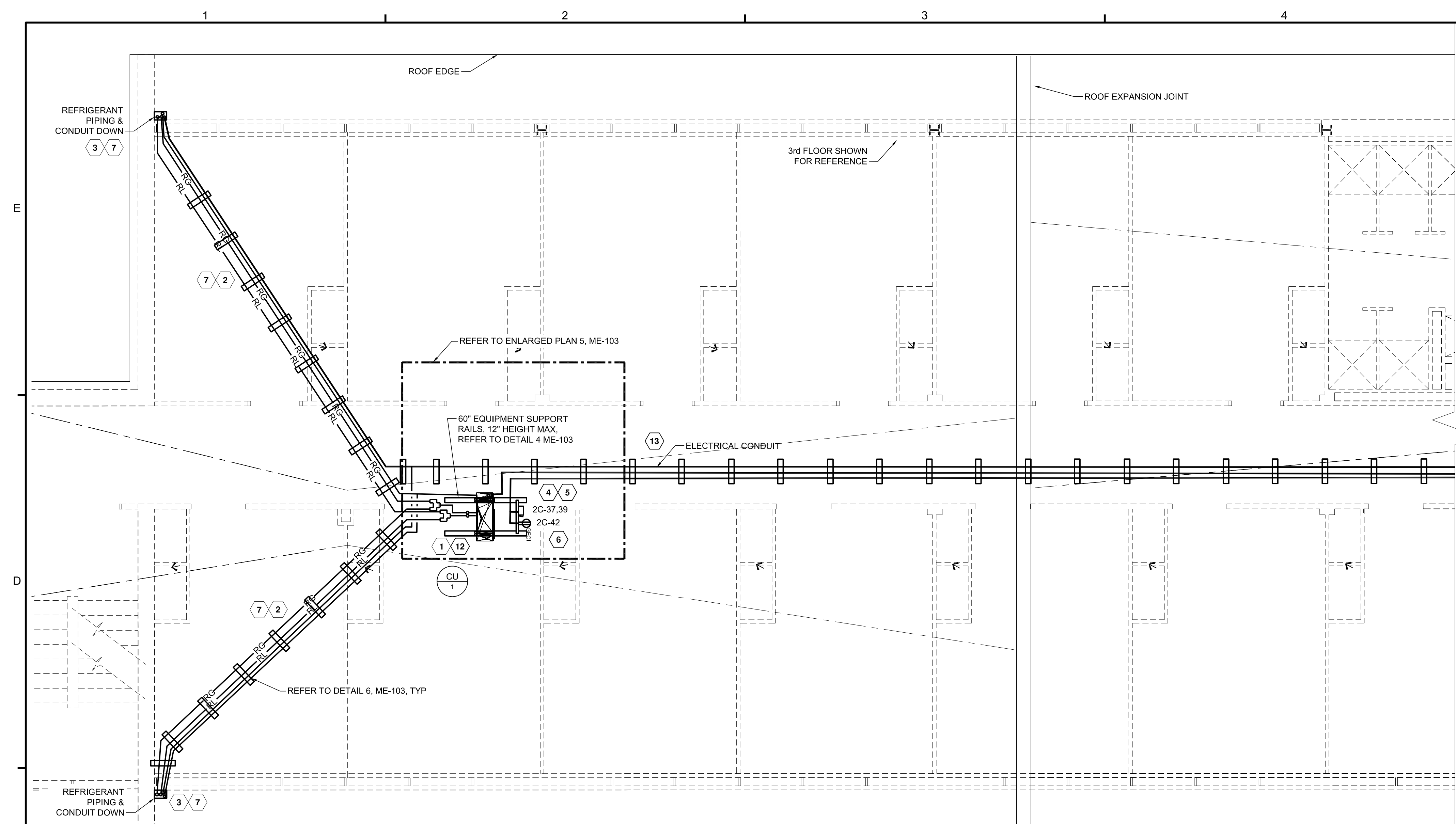
KEYPLAN

THE COLLEGE OF NEW JERSEY
EWING, NJ 08628
CENTENNIAL HALL - PARTIAL AIR CONDITIONING
MECHANICAL-ELECTRICAL
WEST WING SECOND FLOOR PLAN

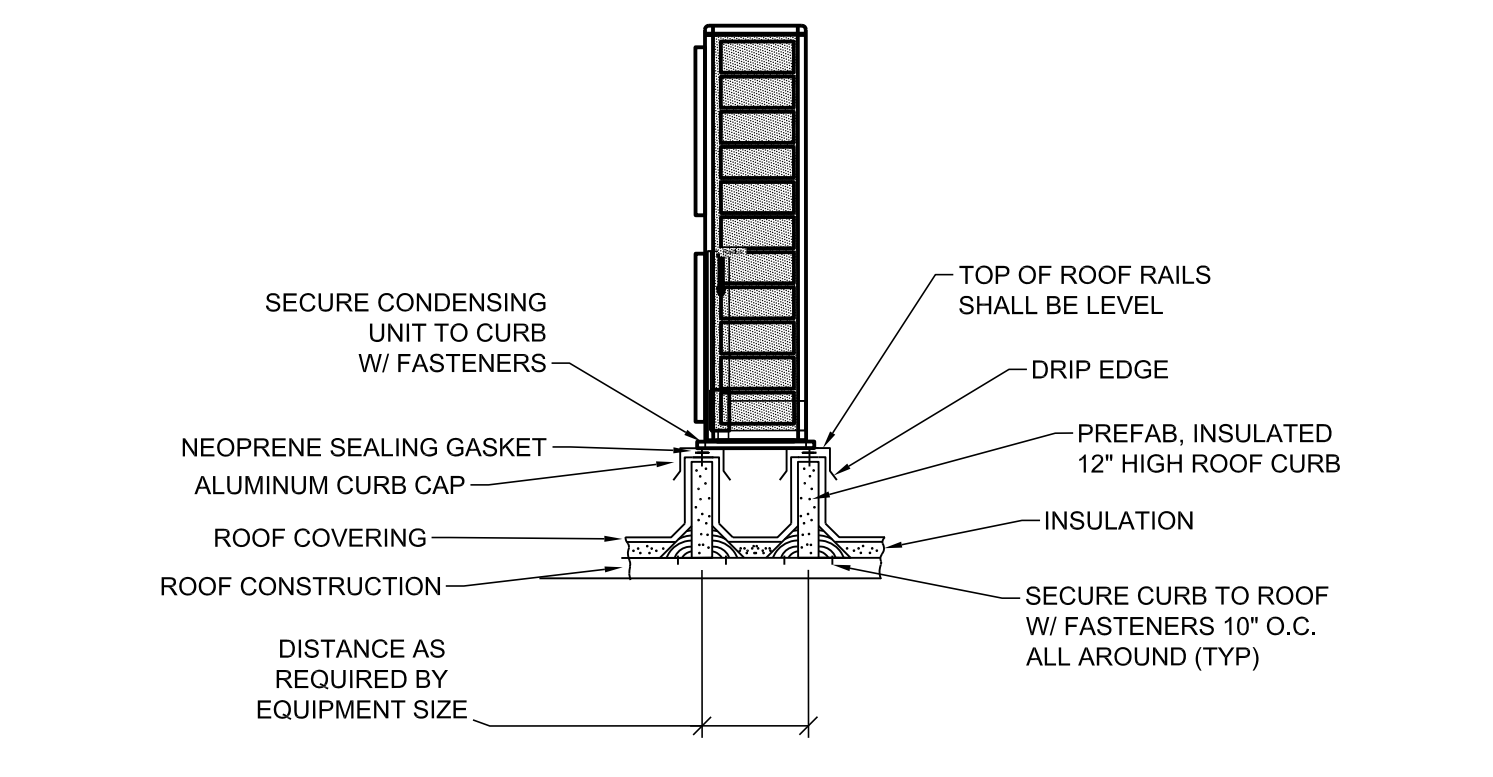
SCALE:	AS NOTED
PREPARED BY:	BLW
CHECKED BY:	CSJ
APPROVED BY:	SJH
PROJECT NO.:	2315.008
DRAWING NO.:	

ME-102

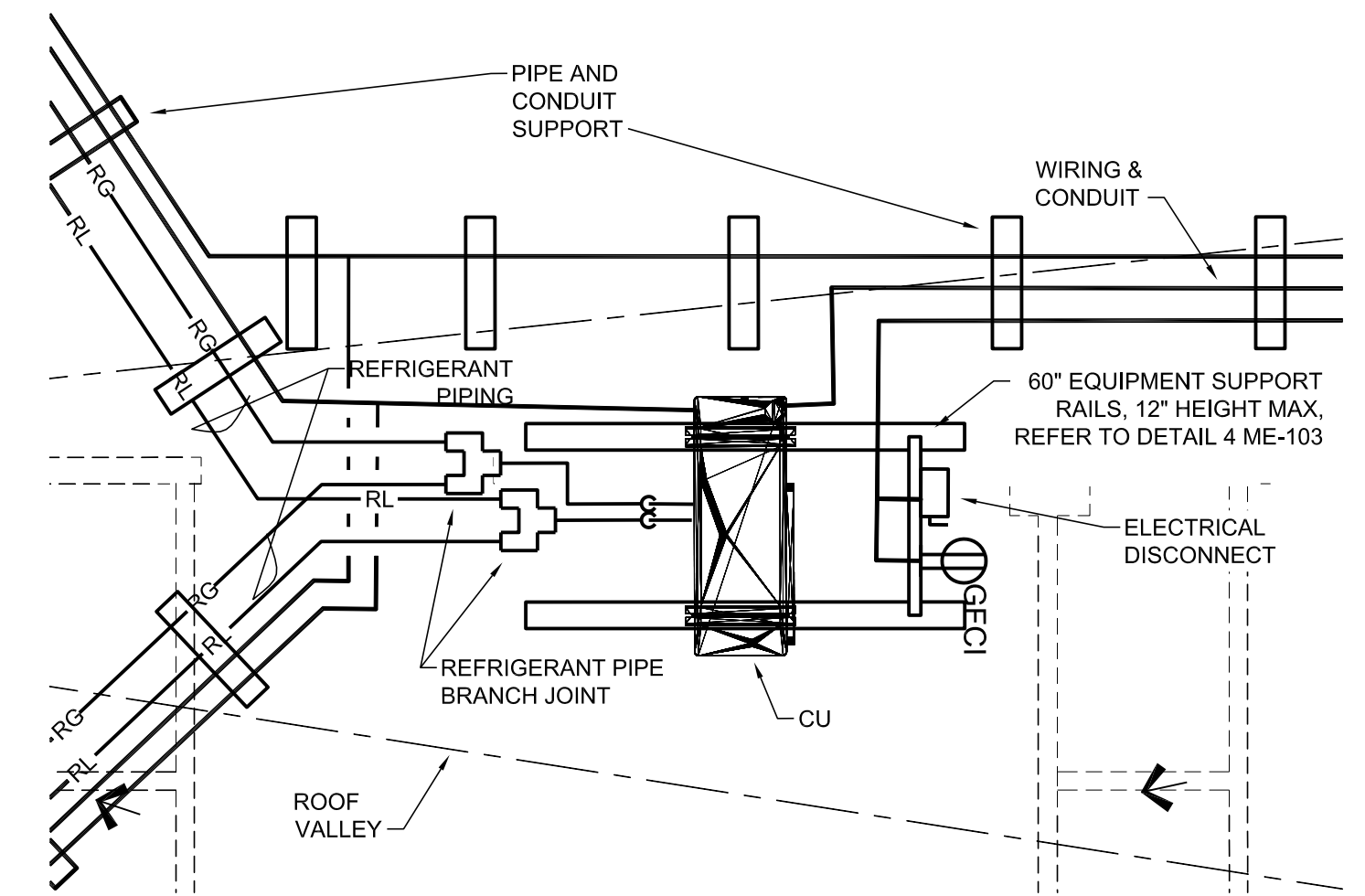
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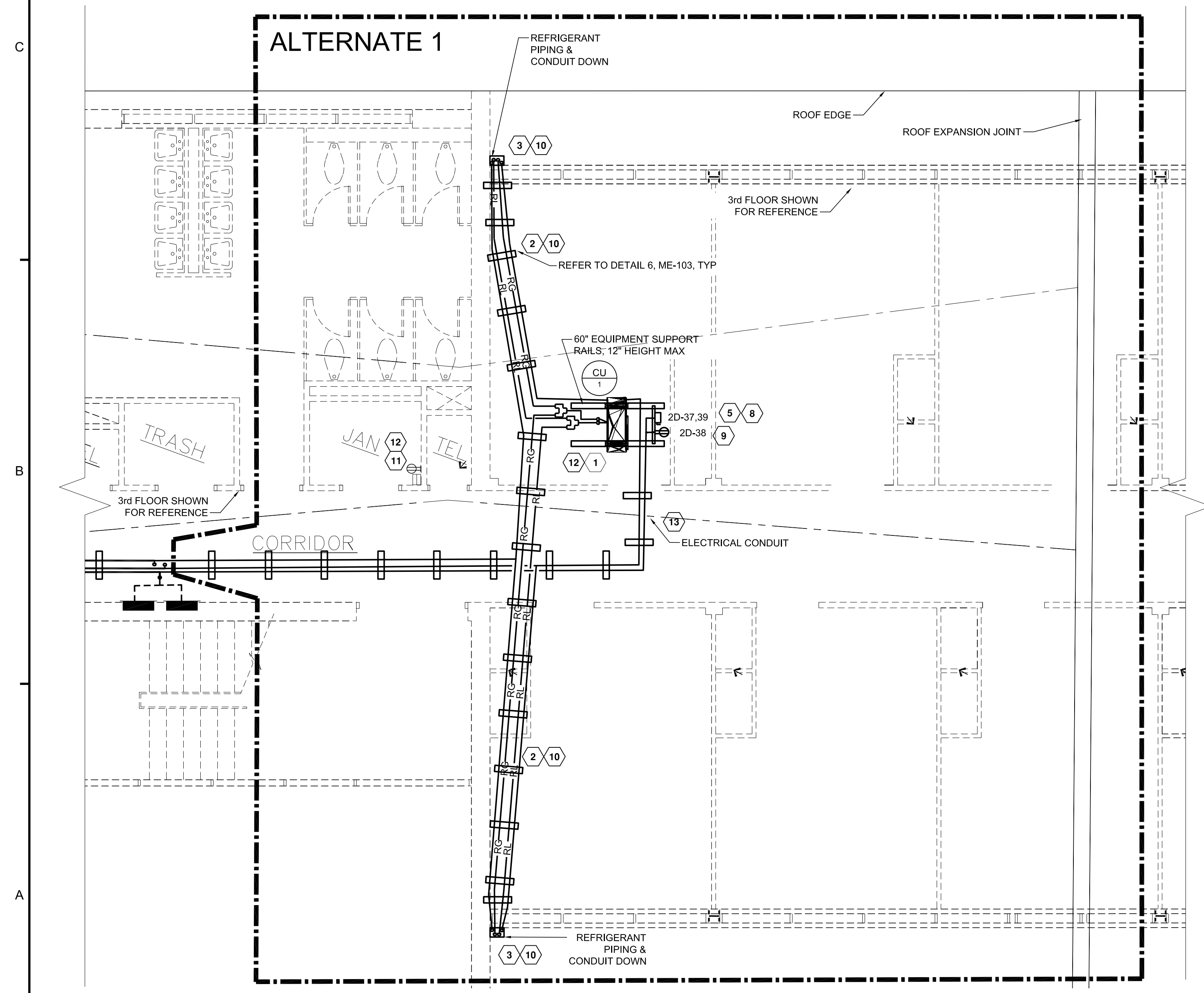
**1 EAST WING PARTIAL ROOF PLAN
TCNJ - CENTENNIAL HALL**
Scale: 1/4" = 1'-0"
0 2' 4'



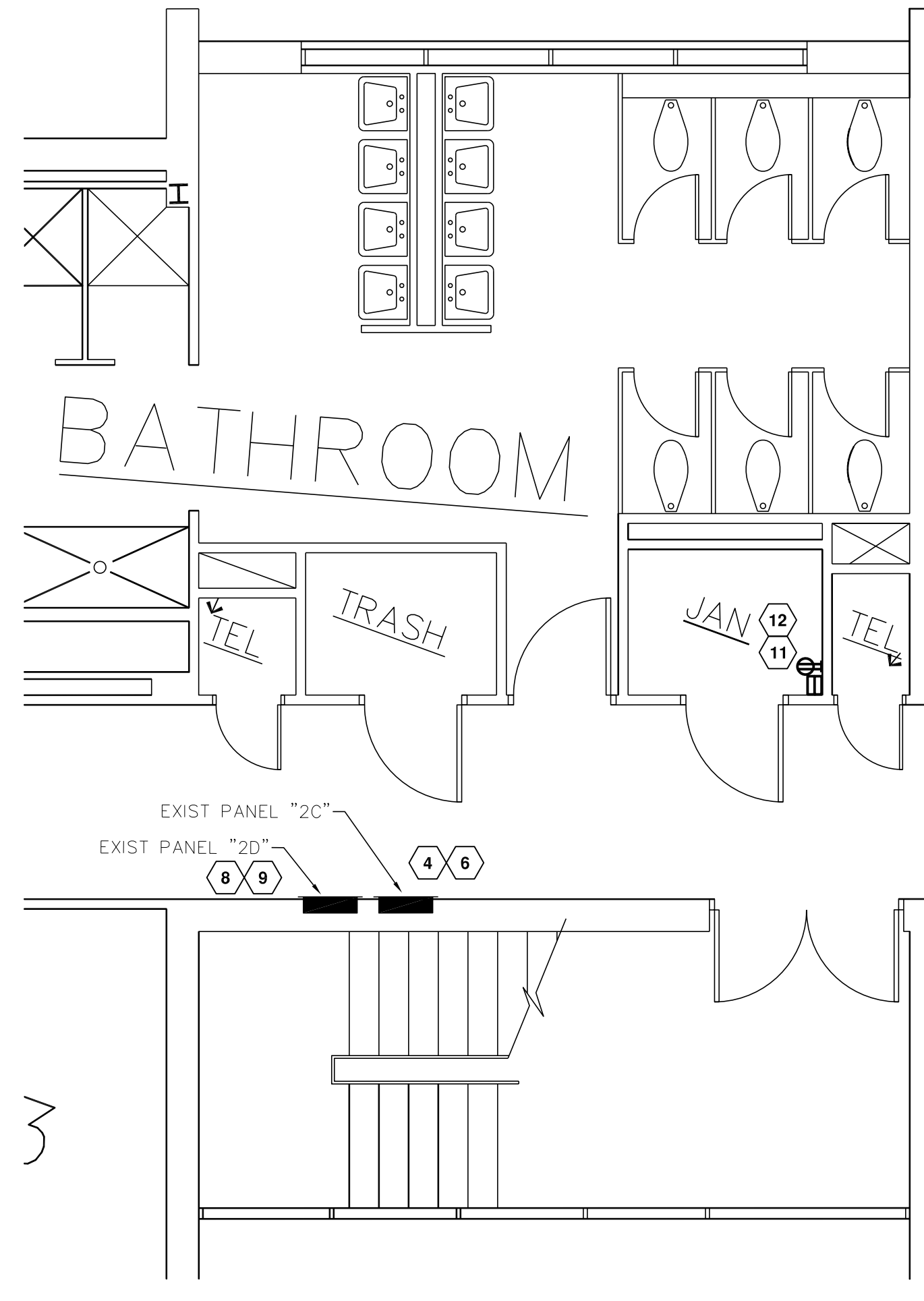
4 EQUIPMENT SUPPORT DETAIL
Scale: NO SCALE



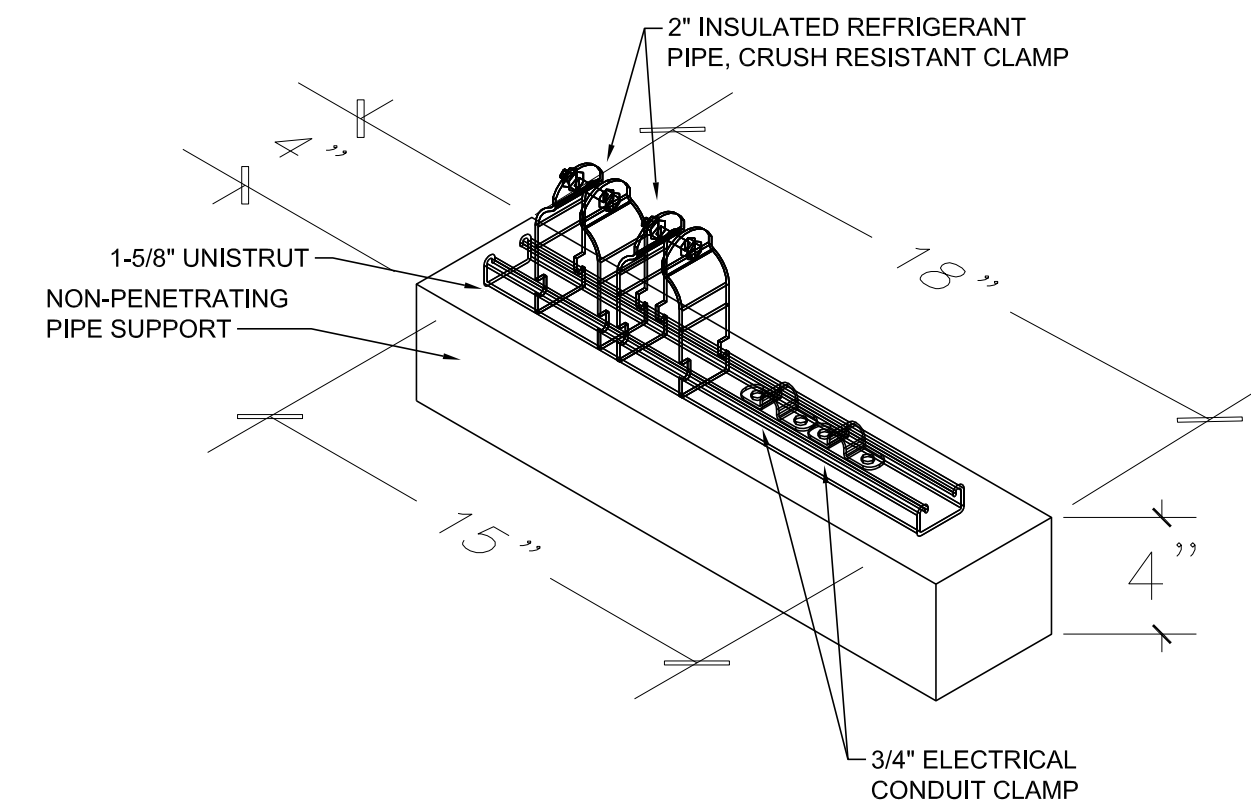
**5 TYPICAL CONDENSER UNIT
ENLARGED PLAN**
Scale: NO SCALE



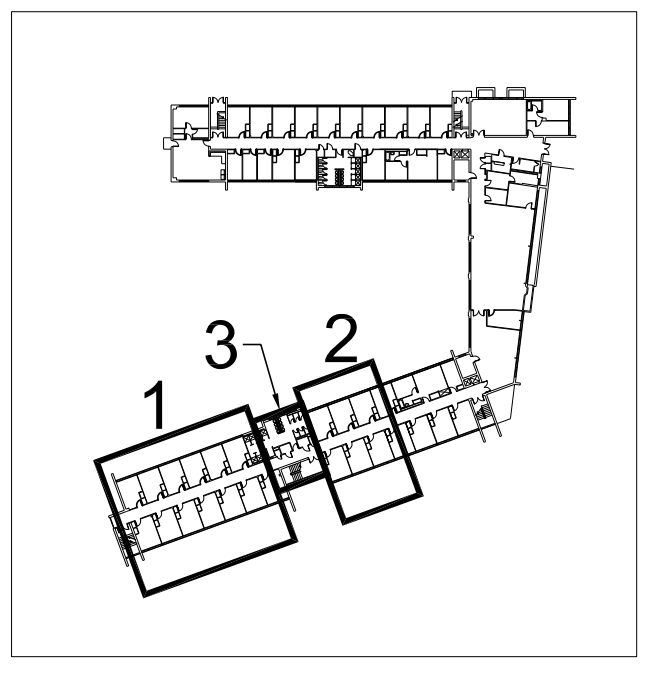
**2 EAST WING PARTIAL ROOF PLAN
TCNJ - CENTENNIAL HALL**
Scale: 1/4" = 1'-0"
0 2' 4'



**3 EAST WING 3RD FLOOR PLAN
TCNJ - CENTENNIAL HALL**
Scale: 1/4" = 1'-0"
0 2' 4'



6 ROOF PIPE & CONDUIT SUPPORT DETAIL
Scale: NO SCALE
0 2' 4'



KEYPLAN

GENERAL SHEET NOTES

- REFER TO DRAWING ME-701 FOR GENERAL, MECHANICAL AND ELECTRICAL NOTES.
- REFER TO DRAWING ME-701 FOR THE LEGEND AND ABBREVIATIONS.
- FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
- FOR SPECIFICATIONS, EQUIPMENT AND MATERIAL DESCRIPTIONS REFER TO ME-701.
- FOR ELECTRIC PANEL SCHEDULES, REFER TO ME-601

SHEET KEYNOTES

- PROVIDE VRF SYSTEM, CONNECT 8 INDOOR UNITS (IU) TO EACH CONDENSING UNIT (CU). PROVIDE EQUIPMENT SUPPORT RAILS, FASTENERS, SUPPORT RAILS TO ROOF AND SEAL ROOF RAILS WATER TIGHT, REFER TO DETAIL 4, ME-103. FASTEN CONDENSING UNIT TO EQUIPMENT RAILS. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE NON-PENETRATING REFRIGERANT PIPING SUPPORTS SPACED 3' MAX UNDER REFRIGERANT PIPING. PROVIDE 18" L X 8" H PIPE SUPPORTS, SUITABLE FOR EXTERIOR USE. PROVIDE ROOF PAD BETWEEN PIPE SUPPORT AND ROOF COVERING. COORDINATE PIPE SUPPORTS WITH CONDUIT. REFER TO KEYNOTE 7, 10 ME-103.
- REFRIGERANT PIPING SHALL PENETRATE ROOF ABOVE CORNER OF EXTERIOR WALLS. COORDINATE ROOF PENETRATIONS WITH CONDUIT. SEE KEYNOTE 7, 10 ME-104. PROVIDE ROOF SEALS. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE BRANCH CIRCUIT WIRING, 2#8 & 1#10 GRD IN 3/4" CONDUIT AND 2" 40A CIRCUIT BREAKER, CONNECT TO EXISTING BREAKER PANEL "20", LOCATED ON 3RD FLOOR. USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. PROVIDE CONDUIT AND NON-PENETRATING ROOF SUPPORTS AND ROUTE CONDUIT ON ROOF TO ABOVE EXISTING PANEL CEILING ACCESS. CONDUIT SHALL PENETRATE ROOF AND ROUTE TO TOP OF EXISTING PANEL. USE EXISTING CEILING ACCESS PANEL. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 60 AMP, 2-POLE, 208V NON-FUSED ELECTRICAL DISCONNECT, WHERE SHOWN AND PROVIDE LABELS TO INDICATE EQUIPMENT SERVED. PROVIDE UNISTRUT MOUNTING STRUCTURE FOR ELECTRICAL DISCONNECT, MOUNTED TO EQUIPMENT SUPPORT. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE WEATHERPROOF CONVENIENCE GFCI RECEPTACLE, NEMA 5-20R, HUBBELL MODEL GFWRST20, OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURE WITH WEATHERPROOF COVER. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" CONDUIT AND 1P 20A CIRCUIT BREAKER, CONNECT TO EXISTING BREAKER PANEL "20", LOCATED ON 3RD FLOOR. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. MOUNT CONVENIENCE RECEPTACLE TO UNISTRUT FOR ELECTRICAL DISCONNECT STRUCTURE. COORDINATE WITH BRANCH CIRCUIT WIRING REQUIRED FOR CENTRAL CONTROLLER, REFER TO KEYNOTE 11, DRAWING ME-103. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 2#12 AND #12 GRD IN 3/4" RIGID CONDUIT, FROM INDOOR UNITS TO EXIST PANEL "20", LOCATED ON 3RD FLOOR. ROUTE CONDUIT IN EXTERIOR PIPE CHASE, PENETRATE ROOF AND ROUTE CONDUIT ALONG WITH REFRIGERANT PIPING. PROVIDE CONDUIT MOUNTING COMPONENTS TO MATCH REFRIGERANT PIPING ROOF MOUNT TYPE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE BRANCH CIRCUIT WIRING, 2#8 & 1#10 GRD IN 3/4" CONDUIT AND 2" 40A CIRCUIT BREAKER, CONNECT TO EXISTING BREAKER PANEL "20", LOCATED ON 3RD FLOOR. USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE WEATHERPROOF CONVENIENCE GFCI RECEPTACLE, NEMA 5-20R, HUBBELL MODEL GFWRST20, OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURE WITH WEATHERPROOF COVER. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" CONDUIT AND 1P 20A CIRCUIT BREAKER, CONNECT TO EXISTING BREAKER PANEL "20". CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. MOUNT CONVENIENCE RECEPTACLE TO UNISTRUT FOR ELECTRICAL DISCONNECT STRUCTURE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 2#12 AND #12 GRD IN 3/4" RIGID CONDUIT, FROM INDOOR UNITS TO EXIST PANEL "20", LOCATED ON 3RD FLOOR. ROUTE CONDUIT IN EXTERIOR PIPE CHASE, PENETRATE ROOF AND ROUTE CONDUIT ALONG WITH REFRIGERANT PIPING. PROVIDE CONDUIT MOUNTING COMPONENTS TO MATCH REFRIGERANT PIPING ROOF MOUNT TYPE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- MOUNT CENTRAL CONTROLLER, ONE FOR EACH WING (ONE FOR TWO CUS) IN 3RD FLOOR JANITOR'S CLOSET BETWEEN 48" TO 60" A.F.F. PROVIDE NEMA 5-20R DUPLEX RECEPTACLE, BACK BOX AND CONDUIT, WITHIN 2 FEET OF CONTROLLER. CONNECT TO SAME CIRCUIT AS ROOF CONVENIENCE RECEPTACLE CIRCUIT. INTERCEPT CIRCUIT IN CORRIDOR NEAR PANELS. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" RIGID METALLIC CONDUIT. PROVIDE UL CSA APPROVED POWER SUPPLY WIRE, 18 AWG AND NEMA 5-20P PLUG.
- PROVIDE CONTROL WIRING FROM CENTRAL CONTROLLER IN 3RD FLOOR JANITOR'S CLOSET TO CONDENSING UNITS (2 TYP), ROUTE WITH ELECTRICAL CONDUIT. PROVIDE 2-CORE, AWG16, SHIELDED WIRE, IN 3/4" RIGID METALLIC CONDUIT. COORDINATE ROOF PENETRATIONS WITH POWER CONDUITS. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY, REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE NON-PENETRATING CONDUIT SUPPORTS. PROVIDE PAD BETWEEN SUPPORT AND ROOFING MATERIAL.



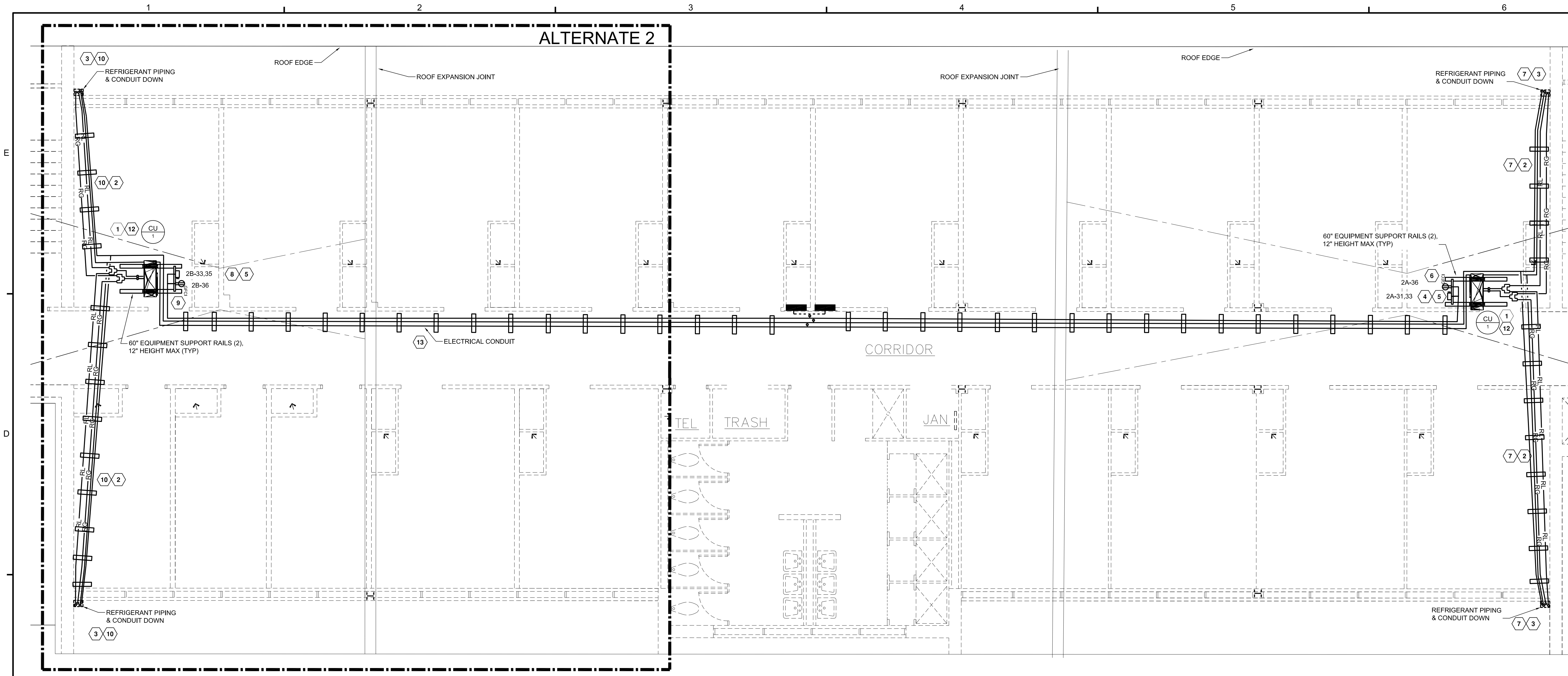
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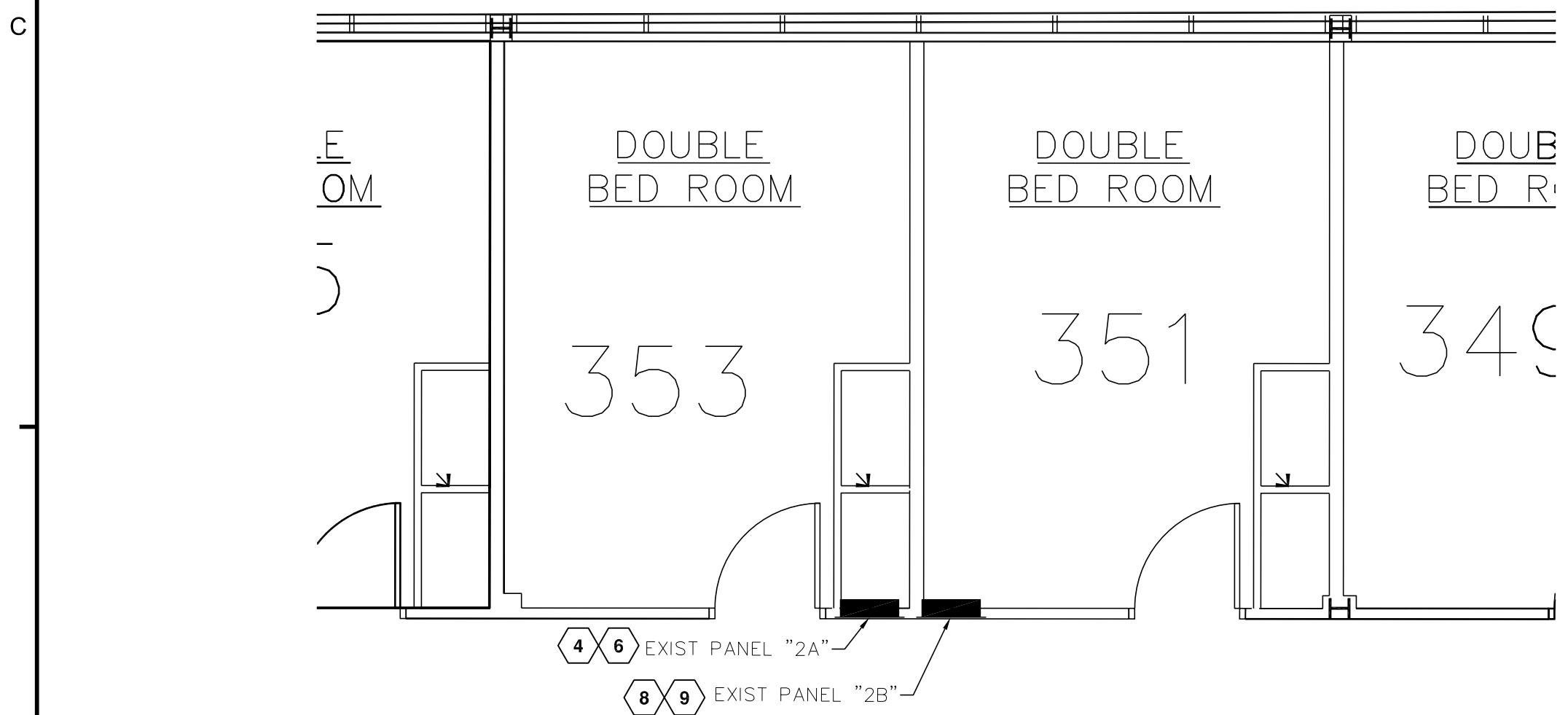
THE COLLEGE OF NEW JERSEY
EWING, NJ 08628
CENTENNIAL HALL - PARTIAL AIR CONDITIONING
MECHANICAL-ELECTRICAL
EAST WING ROOFING PLAN

SCALE:	AS NOTED
PREPARED BY:	BLW
CHECKED BY:	CSJ
APPROVED BY:	SJH
PROJECT NO.:	2315.008
DRAWING NO.:	

ME-103



**WEST WING ROOF PLAN
TCNJ - CENTENNIAL HALL**
Scale: 1/4" = 1'-0"
1



**WEST WING 3RD FLOOR PLAN
TCNJ - CENTENNIAL HALL**
Scale: 1/4" = 1'-0"
2

GENERAL SHEET NOTES

- REFER TO DRAWING ME-701 FOR GENERAL NOTES, MECHANICAL NOTES, ELECTRICAL NOTES, LEGEND AND ABBREVIATIONS.
- FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
- FOR SPECIFICATIONS, EQUIPMENT AND MATERIAL DESCRIPTIONS REFER TO ME-701.
- REFER TO DRAWING ME-401 FOR DETAILS.
- FOR ELECTRIC PANEL SCHEDULES, REFER TO ME-601

SHEET KEYNOTES

- PROVIDE VRF SYSTEM. PROVIDE EQUIPMENT SUPPORT RAILS. FASTEN SUPPORT RAILS TO ROOF AND SEAL ROOF RAILS WATER TIGHT. REFER TO DETAIL 3, ME-103. FASTEN CONDENSING UNIT TO EQUIPMENT RAILS. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE NON-PENETRATING REFRIGERANT PIPING SUPPORTS SPACED 3' MAX UNDER REFRIGERANT PIPING. PROVIDE 1 1/2" X 8" PIPE SUPPORTS, SUITABLE FOR EXTERIOR USE. PROVIDE ROOF PAD BETWEEN PIPE SUPPORT AND ROOF COVERING. COORDINATE PIPE SUPPORTS WITH CONDUIT. REFER TO KEYNOTE 7, 10 ME-104.
- REFRIGERANT PIPING SHALL PENETRATE ROOF ABOVE CORNER OF EXTERIOR WALLS. COORDINATE ROOF PENETRATIONS WITH CONDUIT. REFER TO KEYNOTE 7, 10 ME-104. PROVIDE BOOT SEALS. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE BRANCH CIRCUIT WIRING, 2#8 & 1#10 GRD IN 3/4" CONDUIT AND 2P 40A CIRCUIT BREAKER. CONNECT TO EXISTING BREAKER PANEL "2A". USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL. AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. PROVIDE CONDUIT AND NON-PENETRATING ROOF SUPPORTS AND ROUTE CONDUIT ON ROOF TO ABOVE EXISTING PANEL CEILING ACCESS. CONDUIT SHALL PENETRATE ROOF AND ROUTE TO TOP OF EXISTING PANEL. USE EXISTING CEILING ACCESS PANEL. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 60 AMP, 2-POLE, 208V NON-FUSED ELECTRICAL DISCONNECT, WHERE SHOWN AND PROVIDE LABELS TO INDICATE EQUIPMENT SERVED. PROVIDE UNISTRUT MOUNTING STRUCTURE FOR ELECTRICAL DISCONNECT, MOUNTED TO EQUIPMENT SUPPORT. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE WEATHERPROOF CONVENIENCE GFCI RECEPTACLE, NEMA 5-20R, HUBBELL MODEL GFWRST20, OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURE WITH WEATHERPROOF COVER. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" CONDUIT AND 1P 20A CIRCUIT BREAKER. CONNECT TO EXISTING BREAKER PANEL "2A". CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. MOUNT CONVENIENCE RECEPTACLE TO UNISTRUT FOR ELECTRICAL DISCONNECT STRUCTURE. COORDINATE WITH BRANCH CIRCUIT WIRING REQUIRED FOR CENTRAL CONTROLLER. REFER TO KEYNOTE 11, DRAWING ME-104. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 2#12 AND #12 GND IN 3/4" RIGID CONDUIT, FROM INDOOR UNITS TO EXIST PANEL "2A". ROUTE CONDUIT IN EXTERIOR PIPE CHASE. PENETRATE ROOF AND ROUTE CONDUIT ALONG WITH REFRIGERANT PIPING. PROVIDE CONDUIT MOUNTING COMPONENTS TO MATCH REFRIGERANT PIPING ROOF MOUNT TYPE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE BRANCH CIRCUIT WIRING, 2#8 & 1#10 GRD IN 3/4" CONDUIT AND 2P 40A CIRCUIT BREAKER. CONNECT TO EXISTING BREAKER PANEL "2B". USE AVAILABLE SPACES. CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE WEATHERPROOF CONVENIENCE GFCI RECEPTACLE, NEMA 5-20R, HUBBELL MODEL GFWRST20, OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURE WITH WEATHERPROOF COVER. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" CONDUIT AND 1P 20A CIRCUIT BREAKER. CONNECT TO EXISTING BREAKER PANEL "2B". CIRCUIT BREAKER SHALL BE COMPATIBLE WITH THE EXISTING PANEL AND SHALL HAVE THE ASSOCIATED SHORT CIRCUIT RATING. MOUNT CONVENIENCE RECEPTACLE TO UNISTRUT FOR ELECTRICAL DISCONNECT STRUCTURE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- PROVIDE 2#12 AND #12 GND IN 3/4" RIGID CONDUIT, FROM INDOOR UNITS TO EXIST PANEL "2B". ROUTE CONDUIT IN EXTERIOR PIPE CHASE. PENETRATE ROOF AND ROUTE CONDUIT ALONG WITH REFRIGERANT PIPING. PROVIDE CONDUIT MOUNTING COMPONENTS TO MATCH REFRIGERANT PIPING ROOF MOUNT TYPE. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.
- MOUNT CENTRAL CONTROLLER IN 3RD FLOOR JANITOR'S CLOSET BETWEEN 48" TO 60" A.F.F. PROVIDE NEMA 5-20R DUPLEX RECEPTACLE, BACK BOX AND CONDUIT, WITHIN 2 FEET OF CONTROLLER. CONNECT TO SAME CIRCUIT AS ROOF CONVENIENCE RECEPTACLE CIRCUIT. BASE BID. INTERCEPT CIRCUIT IN CORRIDOR NEAR PANELS. PROVIDE BRANCH CIRCUIT WIRING, 2#12 & 1#12 GRD IN 3/4" RIGID METALLIC CONDUIT. PROVIDE UL, CSA APPROVED POWER SUPPLY WIRE, 18 AWG AND NEMA 5-20P PLUG.
- PROVIDE CONTROL WIRING FROM CENTRAL CONTROLLER IN 3RD FLOOR JANITOR'S CLOSET TO CONDENSING UNIT. ROUTE WITH ELECTRICAL CONDUIT. PROVIDE 2-CORE, AWG16, SHIELDED WIRE, IN 3/4" RIGID METALLIC CONDUIT. COORDINATE ROOF PENETRATIONS WITH POWER CONDUITS. SEAL ROOF PENETRATIONS WATER TIGHT. EXISTING ROOFING MATERIAL IS UNDER WARRANTY. REFER TO GENERAL ROOFING NOTES ON ME-701.

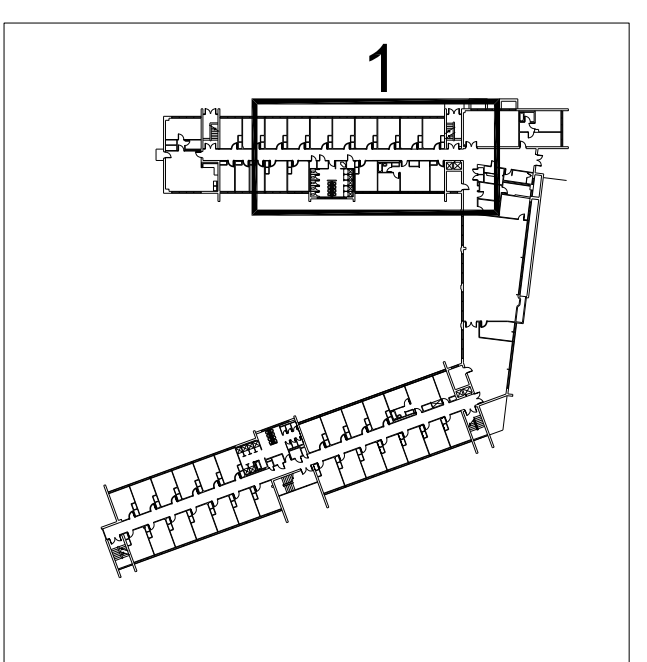


NO.	DATE	REV.	ISSUED FOR	BY	APP'D.
0	02-14-2020		ISSUED FOR BID	SJH	APD

THE COLLEGE OF NEW JERSEY
EWING, NJ 08628
CENTENNIAL HALL - PARTIAL AIR CONDITIONING
MECHANICAL-ELECTRICAL
WEST WING ROOF PLAN

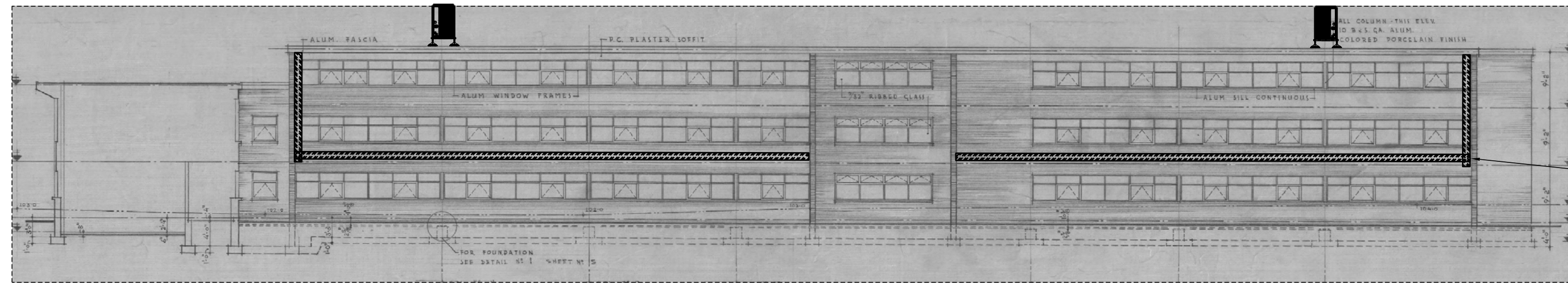
SCALE:	AS NOTED
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CHECKED BY:	CSJ
APPROVED BY:	SJH
PROJECT NO.:	2315.008
DRAWING NO.:	

ME-104

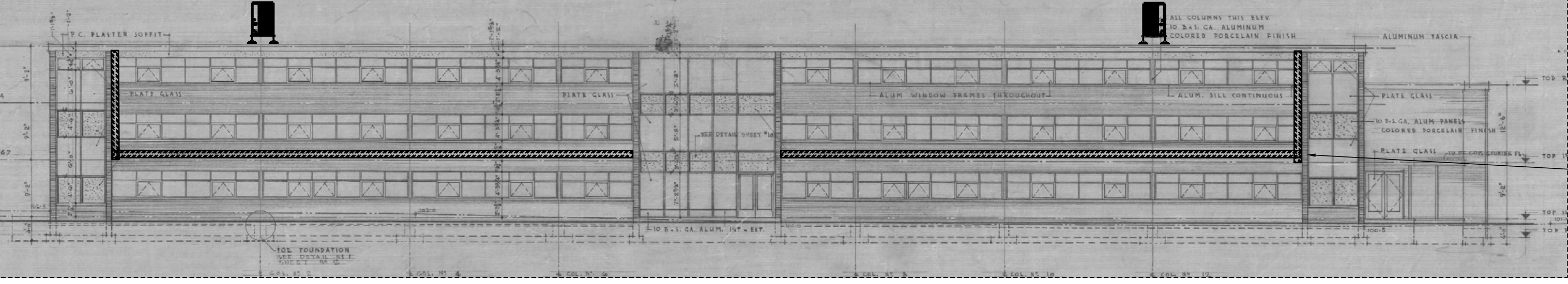


KEYPLAN

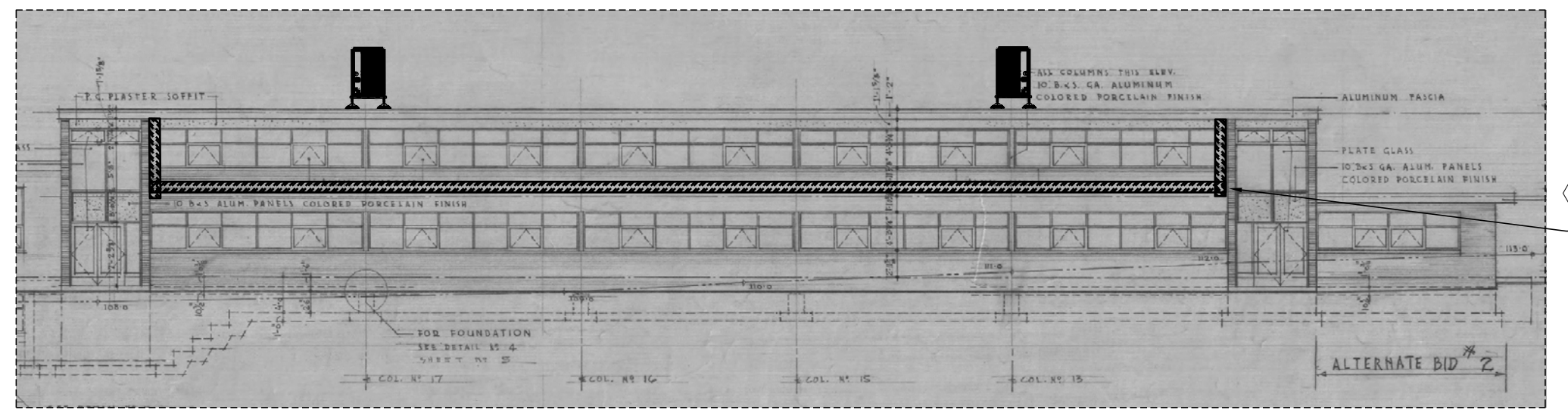
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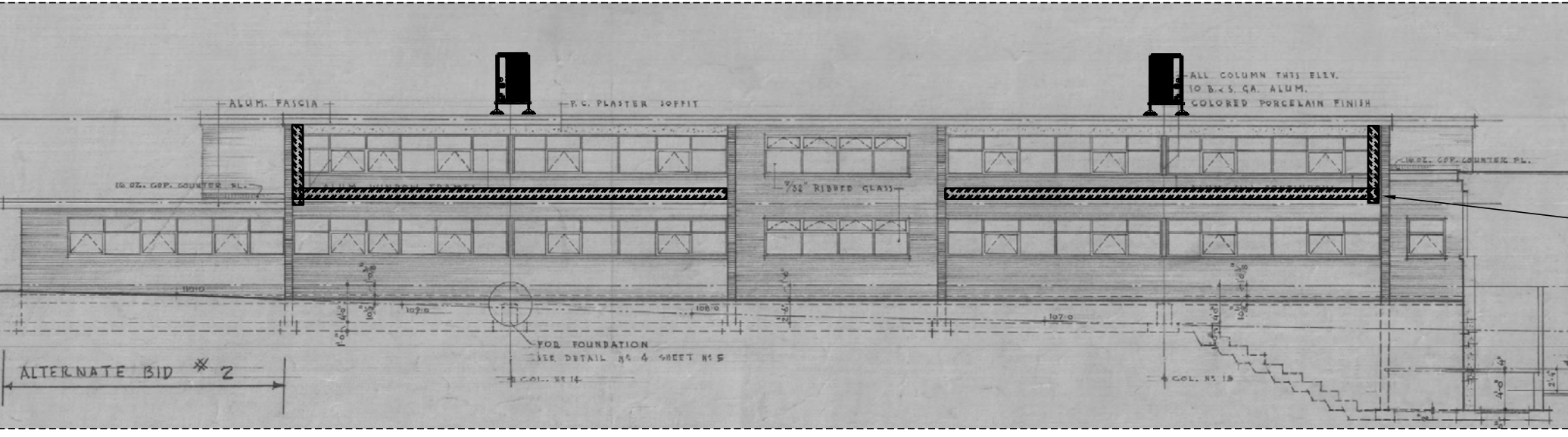
1 EAST WING WEST ELEVATION
 Scale: 1/16" = 1'-0"
 0 8' 16' 32'



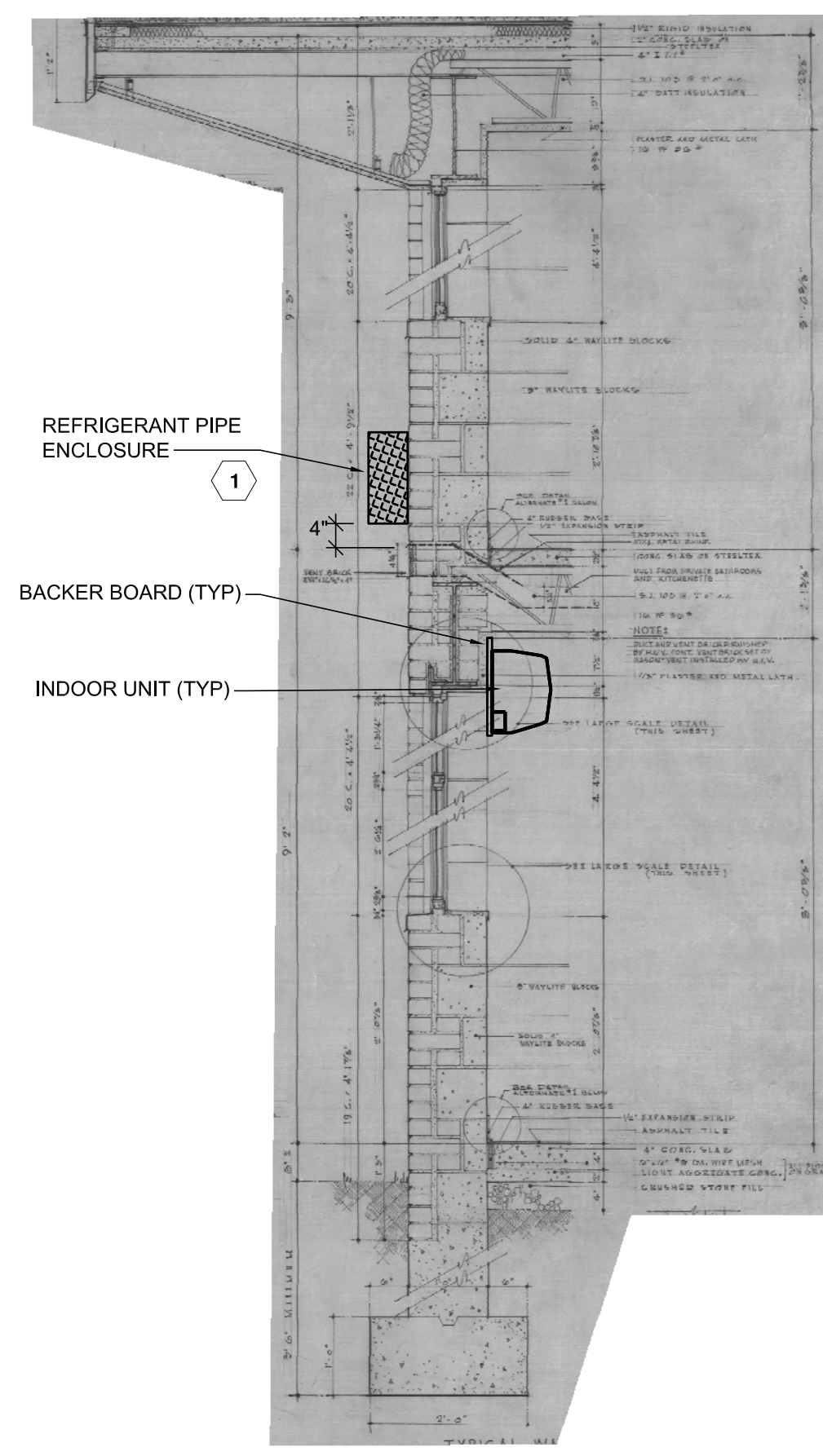
2 EAST WING EAST ELEVATION
 Scale: 1/16" = 1'-0"
 0 8' 16' 32'



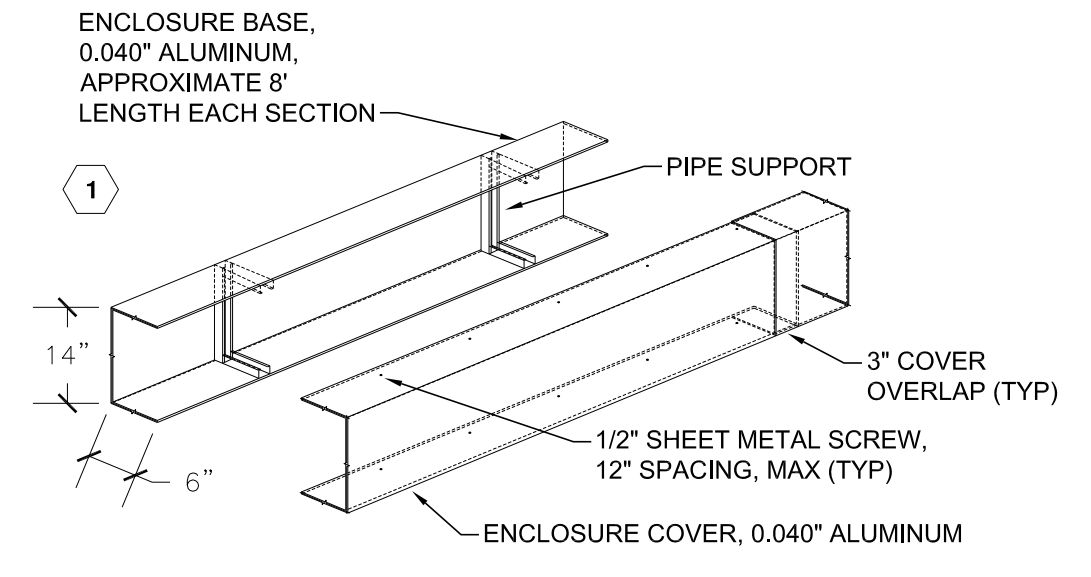
3 WEST WING WEST ELEVATION
 Scale: 1/16" = 1'-0"
 0 8' 16' 32'



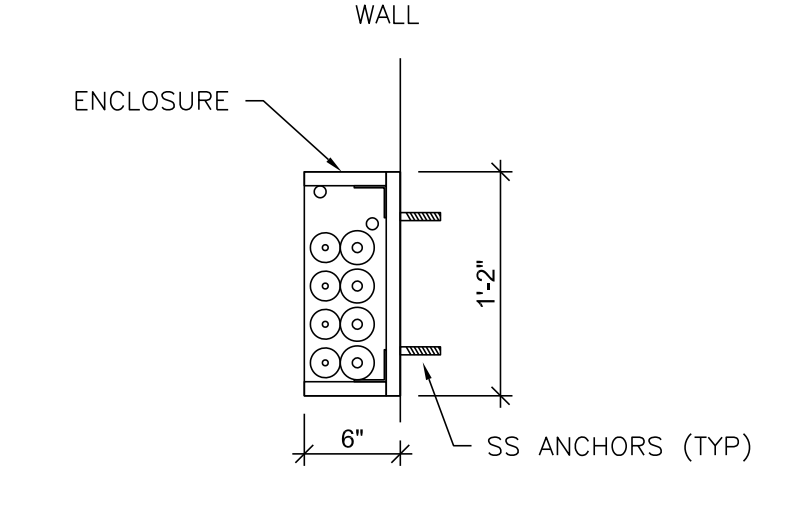
4 WEST WING EAST ELEVATION
 Scale: 1/16" = 1'-0"
 0 8' 16' 32'



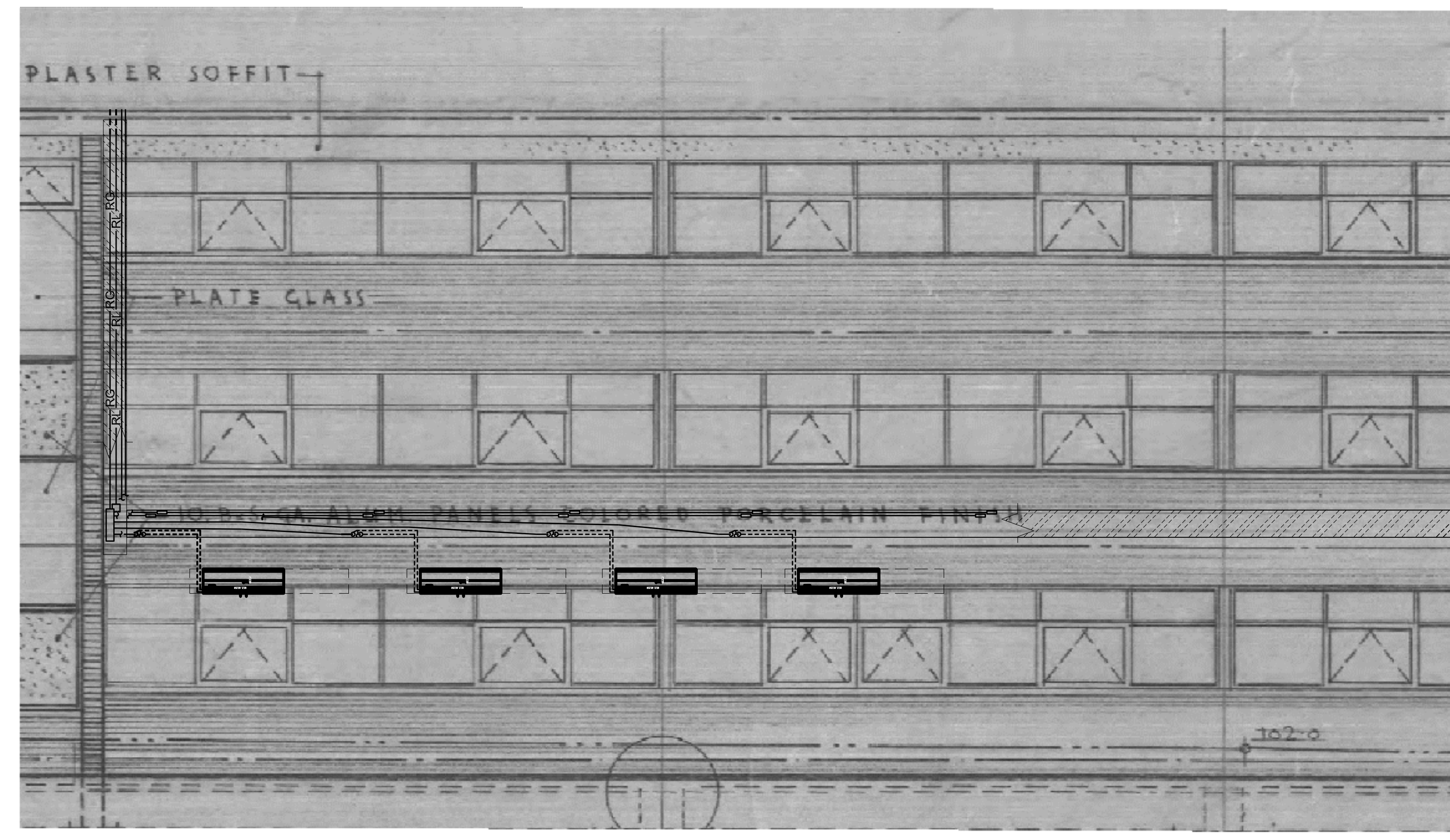
5 SLEEPING WING - TYPICAL EXTERIOR WALL SECTION
 Scale: 1/4" = 1'-0"
 0 2' 4'



6 EXTERIOR WALL REFRIGERANT PIPE ENCLOSURE
 Scale: 1/2" = 1'-0"
 0 1' 2' 4'



7 EXTERIOR WALL REFRIGERANT PIPE ENCLOSURE - PIPE LAYOUT
 Scale: 1/2" = 1'-0"
 0 1' 2' 4'



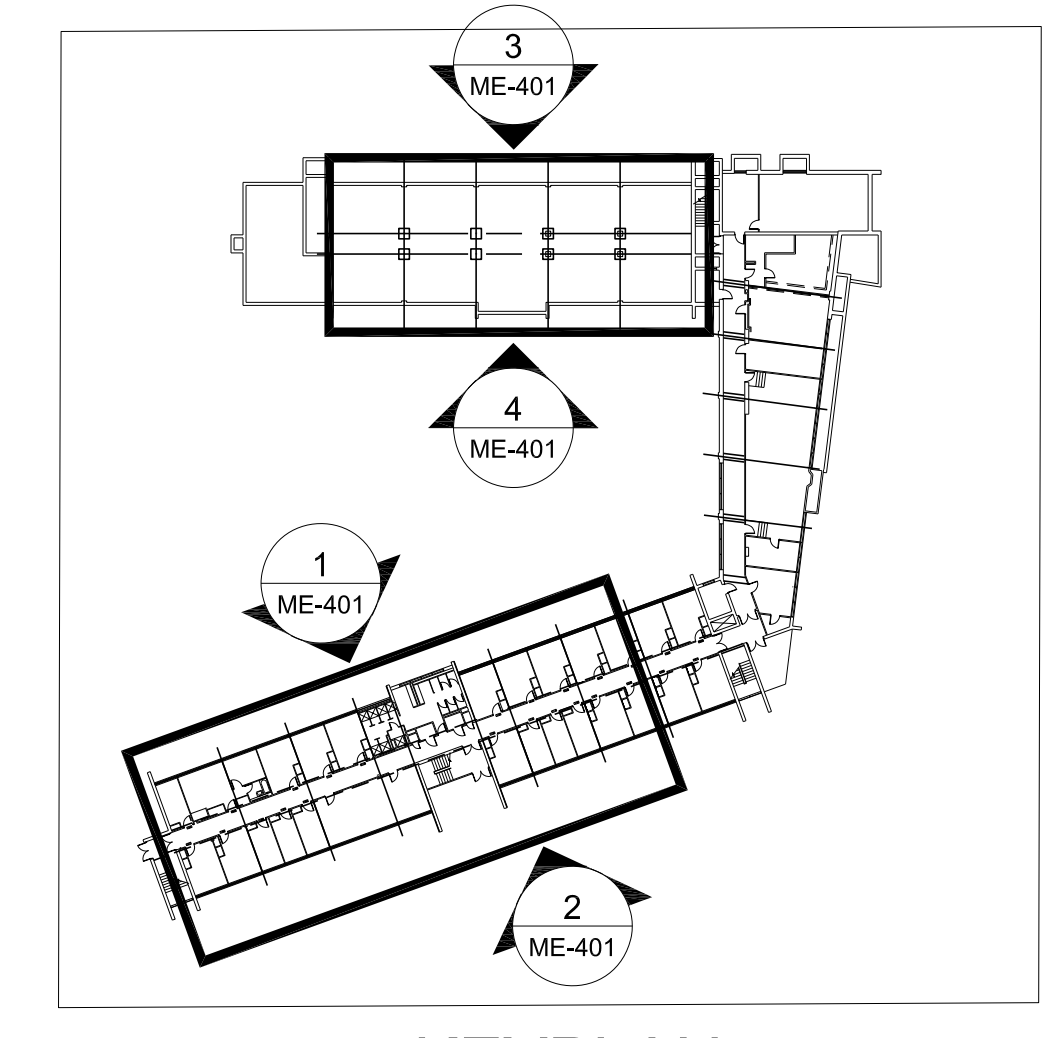
8 EAST & WEST WING - TYPICAL EXTERIOR CHASE AND REFRIGERANT PIPING ELEVATION
 Scale: NO SCALE

GENERAL SHEET NOTES

- REFER TO DRAWING ME-701 FOR GENERAL, MECHANICAL AND ELECTRICAL NOTES.
- REFER TO DRAWING ME-701 FOR THE LEGEND AND ABBREVIATIONS.
- FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
- FOR SPECIFICATIONS, EQUIPMENT AND MATERIAL DESCRIPTIONS REFER TO ME-702.
- FOR ELECTRIC PANEL SCHEDULES, REFER TO ME-601.

SHEET KEYNOTES

- PROVIDE ANODIZED, ALUMINUM, EXTERIOR, WATER RESISTANT, HORIZONTAL AND VERTICAL ENCLOSURES, SIZED TO COVER REFRIGERANT LINE SETS, REFRIGERANT HEADERS, CONDUIT AND WIRING. PROVIDE REFRIGERANT PIPE SUPPORTS, SPACED 3' MAX. REFER TO DETAIL 6. THIS DRAWING. FASTEN ENCLOSURE AND PIPING SUPPORTS SECURELY TO EXTERIOR WALL USING FASTENERS SUITED FOR THE EXTERIOR BRICK AND WEIGHT OF ENCLOSURE. COORDINATE MOUNTING HEIGHT WITH INTERIOR WALL MOUNTED FINITUBE ENCLOSURE AND OWNER. PRIOR TO FABRICATION, ADJUST LENGTH OF ENCLOSURE (± MAX) SO COVER JOINT ALIGNS WITH WINDOW MULLION, WHERE PRACTICAL.



KEYPLAN



REV	DATE	ISSUED FOR BID	ISSUED FOR CONSTRUCTION
0	02-14-2020		

THE COLLEGE OF NEW JERSEY
 EWING, NJ 08628
 CENTENNIAL HALL - PARTIAL AIR CONDITIONING
 MECHANICAL-ELECTRICAL
 ELEVATIONS AND DETAILS

SCALE: AS NOTED
 PREPARED BY: BLW
 CHECKED BY: CSJ
 APPROVED BY: SJH
 PROJECT NO: 2315.008
 DRAWING NO:

ME-401

PANEL SCHEDULE '2A'																								
CKT #	LOAD DESCRIPTION	FEEDER QTY	FEEDER SIZE	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER SIZE	FEEDER QTY	LOAD DESCRIPTION	CKT #			
								A	B	C	A	B	C											
1	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	2				
3	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	4				
5	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	6				
7	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	8				
9	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	10				
11	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	12				
13	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	14				
15	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	16				
17	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	18				
19	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	20				
21	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	22				
23	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	24				
25	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	26				
27	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	28				
29	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	30				
31	CU-1 - BASE	2	8	10	3/4"	40	2	7550	7550	0	0	0	1	20	-	-	-	-	SPARE	32				
33	-	-	-	-	-	-	-	7550	7550	0	0	0	1	20	-	-	-	-	SPARE	34				
35	INDOOR UNITS (8)	2	12	12	3/4"	15	2	290	290	0	0	360	1	20	3/4"	12	12	2	CONVENIENCE RECEPTACLES ROOF	36				
37	-	-	-	-	-	-	-	290	290	0	0	0	1	20	-	-	-	-	SPACE	38				
39	SPACE	-	-	-	-	-	-	0	0	0	0	0	1	20	-	-	-	-	SPACE	40				
41	SPACE	-	-	-	-	-	-	0	0	0	0	0	1	20	-	-	-	-	SPACE	42				
TOTAL KILOWATTS PER PHASE: 7840 7550 290 0 0 360																								
TOTAL A Ø WATTS: 7840 TOTAL A Ø AMPS: 65.33 VOLTAGE: 120/208 3Ø, 4W LOCATION: CORRIDOR 26 NOTES: COPPER BUS, BOLT ON BREAKERS, MAIN LUG, FEED THRU LUGS, FED FROM MDP																								
TOTAL B Ø WATTS: 7550 TOTAL B Ø AMPS: 62.92 AMPACITY: 225A MAIN LUG: 225A																								
TOTAL C Ø WATTS: 650 TOTAL C Ø AMPS: 5.42 AIC RATING: 22,000 MOUNTING: FLUSH																								
TOTAL 3 Ø WATTS: 16040 TOTAL 3 Ø AMPS: 44.52																								
REMARKS:																								

PANEL SCHEDULE '2B'																								
CKT #	LOAD DESCRIPTION	FEEDER QTY	FEEDER SIZE	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER SIZE	FEEDER QTY	LOAD DESCRIPTION	CKT #			
								A	B	C	A	B	C											
1	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	2				
3	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	4				
5	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	6				
7	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	8				
9	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	10				
11	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	12				
13	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	14				
15	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	16				
17	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	18				
19	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	20				
21	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	22				
23	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	24				
25	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	26				
27	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	28				
29	SPARE	-	-	-	-	20	1	0	0	0	0	0	1	20	-	-	-	-	SPARE	30				
31	INDOOR UNITS (8) (ALT 2)	2	12	12	3/4"	15	2	290	290	0	0	360	1	20	3/4"	12	12	2	CONVENIENCE RECEPTACLES ROOF	36				
33	CU-1 (ALT 2)	2	8	10	3/4"	40	2	7550	7550	0	0	0	1	20	-	-	-	-	SPARE	32				
35	-	-	-	-	-	-	-	7550	7550	0	0	0	1	20	-	-	-	-	SPARE	34				
37	-	-	-	-	-	-	-	0	0	0	0	0	1	20	-	-	-	-	SPACE	38				
39	SPACE	-	-	-	-	-	-	0	0	0	0	0	1	20	-	-	-	-	SPACE	40				
41	SPACE	-	-	-	-	-	-	0	0	0	0	0	1	20	-	-	-	-	SPACE	42				
TOTAL KILOWATTS PER PHASE: 290 7550 7840 0 0 360																								
TOTAL A Ø WATTS: 290 TOTAL A Ø AMPS: 2.42 VOLTAGE: 120/208 3Ø, 4W LOCATION: CORRIDOR 26 NOTES: COPPER BUS, BOLT ON BREAKERS, MAIN LUG, FEED THRU LUGS, FED FROM MDP																								
TOTAL B Ø WATTS: 7550 TOTAL B Ø AMPS: 62.92 AMPACITY: 225A MAIN LUG: 225A																								
TOTAL C Ø WATTS: 650 TOTAL C Ø AMPS: 5.42 AIC RATING: 22,000 MOUNTING: FLUSH																								
TOTAL 3 Ø WATTS: 16040 TOTAL 3 Ø AMPS: 44.52																								
REMARKS:																								

- GENERAL SHEET NOTES**
- REFER TO DRAWING ME-701 FOR GENERAL, MECHANICAL AND ELECTRICAL NOTES.
 - REFER TO DRAWING ME-701 FOR THE LEGEND AND ABBREVIATIONS.
 - FOR EQUIPMENT RATINGS AND CAPACITIES REFER TO THE SCHEDULES ON DRAWING ME-701.
 - FOR SPECIFICATIONS, EQUIPMENT AND MATERIAL DESCRIPTIONS REFER TO ME-701.



PANEL SCHEDULE '2C'																								
CKT #	LOAD DESCRIPTION	FEEDER QTY	FEEDER SIZE	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER SIZE	FEEDER QTY	LOAD DESCRIPTION	CKT #			
								A	B	C	A	B	C											
1	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	2				
3	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	4				
5	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	6				
7	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	8				
9	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	10				
11	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	12				
13	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	14				
15	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	16				
17	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	18				
19	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	20				
21	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	22				
23	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	24				
25	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	26				
27	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	28				
29	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	30				
31	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	32				
33	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	34				
35	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	36				
37	CU-1 (BASE)	2	8	10	3/4"	40	2	7550	7550	290	290	0	1	20	3/4"	12	12	2	INDOOR UNITS (8)	38				
39	-	-	-	-	-	-	-	7550	7550	290	290	0	1	20	-	-	-	-	SPACE	40				
41	SPACE	-	-	-	-	-	-	0	0	0	0	360	1	20	3/4"	12	12	2	CONVENIENCE RECEPTACLES ROOF	42				
TOTAL KILOWATTS PER PHASE: 7550 7550 0 290 290 360																								
TOTAL A Ø WATTS: 7840 TOTAL A Ø AMPS: 65.33 VOLTAGE: 120/208 3Ø, 4W LOCATION: CORRIDOR 26 NOTES: COPPER BUS, BOLT ON BREAKERS, MAIN LUG, FEED THRU LUGS, FED FROM MDP																								
TOTAL B Ø WATTS: 7840 TOTAL B Ø AMPS: 65.33 AMPACITY: 225A MAIN LUG: 225A																								
TOTAL C Ø WATTS: 360 TOTAL C Ø AMPS: 3.00 AIC RATING: 22,000 MOUNTING: FLUSH																								
TOTAL 3 Ø WATTS: 16040 TOTAL 3 Ø AMPS: 44.52																								
REMARKS:																								

PANEL SCHEDULE '2D'																								
CKT #	LOAD DESCRIPTION	FEEDER QTY	FEEDER SIZE	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER SIZE	FEEDER QTY	LOAD DESCRIPTION	CKT #			
								A	B	C	A	B	C											
1	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	2				
3	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	4				
5	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	6				
7	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	8				
9	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	10				
11	EXISTING CIRCUIT	2	12	12	3/4"	20	1	0	0	0	0	0	1	20	3/4"	12	12	2	EXISTING CIRCUIT	12				
13	EXISTING CIRCUIT	2	12	12	3/4"	20																		

SPECIFICATIONS

GENERAL DESCRIPTION

A. PLANS AND SPECIFICATIONS

1. THE PLANS AND SPECIFICATIONS ARE CONTRACT BID DOCUMENTS, AND ARE FOR THE PURPOSE OF ILLUSTRATING THE GENERAL CHARACTER AND SCOPE OF WORK FOR CONTRACTORS TO PREPARE A BID PROPOSAL. THE PLANS ARE NOT SHOP DRAWINGS AND DO NOT DISMISS THE CONTRACTOR FROM THE RESPONSIBILITY OF PREPARING FABRICATION AND INSTALLATION SHOP DRAWINGS. NOR DO THEY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF COORDINATING WITH THE WORK OF OTHER TRADES AND THE BUILDING STRUCTURE.

B. SUBMITTALS

1. COORDINATION: COORDINATE PREPARATION AND PROCESSING OF SUBMITTALS WITH PERFORMANCE OF CONSTRUCTION ACTIVITIES. TRANSMIT EACH SUBMITTAL SUFFICIENTLY IN ADVANCE OF PERFORMANCE OF RELATED CONSTRUCTION ACTIVITIES TO AVOID DELAY.

2. SUBMITTAL PREPARATION: PLACE A PERMANENT LABEL OR TITLE BLOCK ON EACH SUBMITTAL FOR IDENTIFICATION. INDICATE THE NAME OF THE ENTITY THAT PREPARED EACH SUBMITTAL ON THE LABEL OR TITLE BLOCK.

3. COLLECT PRODUCT DATA INTO A SINGLE SUBMITTAL FOR EACH ELEMENT OF CONSTRUCTION OR SYSTEM. PRODUCT DATA INCLUDES PRINTED INFORMATION, SUCH AS MANUFACTURER'S INSTALLATION INSTRUCTIONS, CATALOGS, STANDARDS, COLOR CHARTS, ROUGH-IN DIAGRAMS AND TEMPLATES, STANDARD WIRING DIAGRAMS, AND PERFORMANCE CURVES. WHERE PRODUCT DATA MUST BE SPECIALLY PREPARED, INDICATE THAT PRODUCT DATA IS NOT SUITABLE FOR USE. SUBMIT AS "SHOP DRAWINGS." SUBMIT PRODUCT DATA FOR THE FOLLOWING:

- ELECTRICAL EQUIPMENT
- ELECTRICAL DISTRIBUTION EQUIPMENT
- CONDUIT AND CABLE
- WIRING DEVICES
- MECHANICAL EQUIPMENT
- PIPE & CONDUIT SUPPORTING DEVICES
- REFRIGERANT PIPING AND FITTINGS
- EXTERIOR PIPE ENCLOSURE
- REFRIGERANT PIPING INSULATION
- REFRIGERANT HEADERS AND JOINTS
- VRF INDOOR UNIT
- VRF OUTDOOR UNIT

4. SUBMIT OPERATION AND MAINTENANCE DATA FOR EACH TYPE OF PRODUCT SPECIFIED IN 1) TO 12) ABOVE FOR INCLUSION IN AN OPERATION AND MAINTENANCE MANUAL.

5. RECORD DRAWINGS: SUBMIT TWO COPIES OF AS-BUILT DRAWINGS. PROVIDE MARKUPS UPON A CLEAN SET OF CONTRACT DRAWINGS SHOWING ALL CONDITIONS "AS BUILT." INCLUDE ACTUAL CIRCUIT NUMBERS, DEVIATIONS FROM CONTRACT DOCUMENTS, DIMENSIONS TO CONCEALED EQUIPMENT, ETC.

6. PERMITS, FEES: OWNER SHALL APPLY FOR AND OBTAIN ALL PERMITS REQUIRED FOR ALL WORK. OWNER SHALL OBTAIN A CERTIFICATE OF INSPECTION FROM A RECOGNIZED AGENCY AT THE CONCLUSION OF WORK.

C. WARRANTY

1. THE CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE, IN WRITING, ALL WORK, ARTICLES, APPLIANCES, MATERIALS, EQUIPMENT, AND WORKMANSHIP FURNISHED, INSTALLED, OR SUPPLIED UNDER THIS CONTRACT FOR A PERIOD OF TWO YEARS FROM THE DATE OF ACCEPTANCE BY THE OWNER.

2. THE CONTRACTOR SHALL ADJUST, REPAIR, OR REPLACE ANY DEFECTIVE PART OF THE SYSTEM WITHOUT COST TO THE OWNER.

D. CODES AND STANDARDS

1. PROVIDE EQUIPMENT AND INSTALLATION IN ACCORDANCE WITH THIS SPECIFICATION AND APPLICABLE REQUIREMENTS OF THE FOLLOWING:

- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
- AMERICANS WITH DISABILITIES ACT (PUBLIC LAW 101-336)
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
- LATEST EDITION OF NATIONAL ELECTRICAL CODE (NEC)
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- UNDERWRITERS LABORATORIES INC. (UL)
- NATIONAL FIRE PROTECTION ASSOCIATION: NATIONAL FIRE CODES (NFFA)
- NA DCA CODES
- ALL LOCAL CODES AND ORDINANCES

2. CONTRACTOR SHALL COMPLETE ALL NECESSARY PERMIT PACKETS AND ASSIST THE OWNER WITH ALL PERMIT APPLICATIONS. THE OWNER SHALL OBTAIN ALL PERMITS, LICENSES, AND APPROVALS WITH THE DEPARTMENTS HAVING JURISDICTION, PAY ALL CHARGES AND FEES, FILE ALL NECESSARY PLANS, AND GIVE ALL NOTICES NECESSARY AND INCIDENT TO DO THE LAWFUL PROSECUTION OF THE WORK.

260519 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. STANDARDS:

- LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE.
- CONDUCTORS SHALL BE R90HS COMPLIANT.
- CONDUCTOR AND CABLE MARKING: COMPLY WITH WIRE AND CABLE MARKING ACCORDING TO UL'S "WIRE AND CABLE MARKING AND APPLICATION GUIDE."

2. CONDUCTORS

- COPPER, COMPLYING WITH ASTM B 3 FOR BARE ANNEALED COPPER AND WITH ASTM B 8 FOR STRANDED CONDUCTORS.
- CONDUCTOR INSULATION: TYPE THHN AND THWN-2 COMPLYING WITH UL 83.
- FEEDERS AND BRANCH CIRCUITS OTHER THAN RECEPTACLE CIRCUITS: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, TYPE THHN/THWN-2, COMPLYING WITH UL 83.
- CONTROL CIRCUITS, COPPER, STRANDED CONDUCTOR 600 VOLT INSULATION, TYPE THHN/THWN-2, COMPLYING WITH UL 83. INSIDE ENCLOSURE INSULATION & CONTROL WIRING TYPE SIS.
- METAL CLAD CABLE: FACTORY ASSEMBLY OF ONE OR MORE CURRENT-CARRYING INSULATED CONDUCTORS IN AN OVERALL METALLIC SHEATH.
- ALL WIRING SHALL BE INSTALLED IN RACEWAY. METAL CLAD CABLE CAN BE UTILIZED IN ACCORDANCE WITH NEC REQUIREMENTS FOR INTENDED LOCATION AND USE.

3. CONNECTORS AND SPLICES

- DESCRIPTION: FACTORY-FABRICATED CONNECTORS, SPLICES, AND LUGS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED. LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE.
- SPLICE ONLY IN ACCESSIBLE JUNCTION BOXES.
- USE SOLDERLESS PRESSURE CONNECTORS WITH INSULATING COVERS FOR STRANDED AND INSULATED WIRE AND INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR SOLID TO STRANDED AND SOLID TO SOLID COPPER WIRE SPLICES AND TAPS, NO. 8 AWG AND SMALLER.
- USE INSULATED MULTI-CABLE CONNECTOR BLOCKS FOR COPPER WIRE SPLICES AND TAPS, NO. 6 AWG AND LARGER AS MANUFACTURED BY NSI, TYPE POLARIS, OR APPROVED EQUIVALENT.

SECONDARY GROUNDING

1. ELECTRICAL GROUNDING SYSTEM SHALL FULLY COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE - ARTICLE 250.

4. WIRE/CABLE IDENTIFICATION

- LABEL EACH WIRE AT ALL TERMINATION POINTS WITH IDENTITY NUMBER AND LOCATION OF OTHER END OF CONDUCTOR.
- THE FOLLOWING COLOR CODING SHALL BE USED THROUGHOUT:
120/ 208V - 3 PHASE
PHASE A - RED
PHASE B - BLACK
PHASE C - BLUE
NEUTRAL - WHITE
GROUND - GREEN
ISOLATED GROUND - GREEN WITH WHITE STRIPE.

5. CABLE TESTING

- ALL NEW CABLES, INCLUDING ALL TERMINATIONS SHALL BE TESTED AFTER INSTALLATION, AND PRIOR TO BEING ENERGIZED.
- CABLE TEST SHALL CONSIST OF A CONDUCTOR CONTINUITY TEST FOR ALL CABLES 600 VOLTS AND BELOW.
- TORQUE TEST ALL CONDUCTOR TERMINATIONS AND CONNECTIONS TO CABLE AND EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS.
- CORRECT MALFUNCTIONING PRODUCTS AT SITE, WHERE POSSIBLE, AND RETEST TO DEMONSTRATE COMPLIANCE. OTHERWISE, REMOVE AND REPLACE WITH NEW AND RETEST.

6. APPLICATIONS

- CONCEALED INTERIOR LOCATIONS: BUILDING WIRE IN RACEWAYS, OR METAL CLAD CABLE.
- EXPOSED INTERIOR LOCATIONS: BUILDING WIRE IN RACEWAYS, OR METAL CLAD CABLE.

260526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. STANDARDS:

- LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH UL 467 FOR GROUNDING AND BONDING MATERIALS AND EQUIPMENT.

2. CONDUCTORS:

- INSULATED CONDUCTORS: COPPER OR TINNED-COPPER WIRE OR CABLE INSULATED FOR 600 VOLTS UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITIES HAVING JURISDICTION.
- BARE COPPER CONDUCTORS:
 - SOLID CONDUCTORS: ASTM B 3
 - STRANDED CONDUCTORS: ASTM B 8
 - TINNED CONDUCTORS: ASTM B 33
- BONDING CABLE: 28 KIAMIL, 14 STRANDS OF NO. 17 AWG CONDUCTOR, 1/4" IN DIAMETER.
- BONDING CONDUCTOR: NO. 4 OR NO. 6 AWG, STRANDED CONDUCTOR.
- BONDING JUMPER: COPPER TAPE, BRAIDED CONDUCTORS TERMINATED WITH COPPER FERRULES: 1-5/8" WIDE AND 1/16" THICK.
- TINNED BONDING JUMPER: TINNED-COPPER TAPE, BRAIDED CONDUCTORS TERMINATED WITH COPPER FERRULES: 1-5/8" WIDE AND 1/16" THICK.

3. CONNECTORS

- CONNECTORS: LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR APPLICATIONS IN WHICH USED AND FOR SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS CONNECTED.
- FITTINGS AND COMPONENTS: PROVIDE FITTINGS & COMPONENTS FOR A COMPLETE SYSTEM.
- CLASSIFICATION:
 - COMPLIANCE: RACEWAY AND SYSTEM COMPONENTS.
 - UL AND CUL LISTED.
 - ETL AND CETL LISTED.
 - SURFACE RACEWAYS SHALL BE SUITABLE FOR USE IN DRY INTERIOR LOCATIONS ONLY, AS COVERED IN ARTICLE 386 OF THE NATIONAL ELECTRICAL CODE.
 - SURFACE METAL RACEWAYS AND FITTINGS SHALL BE LISTED BY UNDERWRITERS LABORATORIES UNDER FILE NUMBER E4378, LISTING AND CLASSIFICATION NUMBER RJBT AND FILE NUMBER E41751, LISTING AND CLASSIFICATION NUMBER RJPR RESPECTIVELY.
 - SYSTEMS SHALL COMPLY WITH UL STANDARD UL5 FOR SURFACE METAL RACEWAYS.

4. GROUNDING ELECTRODES

- GROUND RODS: COPPER-CLAD STEEL; 3/4 INCH BY 10 FEET.
- GROUND PLATES: 1/4" THICK, HOT-DIP GALVANIZED.

5. APPLICATIONS:

- CONDUCTORS: INSTALL SOLID CONDUCTOR FOR NO. 8 AWG AND SMALLER, AND STRANDED CONDUCTORS FOR NO. 6 AWG AND LARGER UNLESS OTHERWISE INDICATED.
- UNDERGROUND CONDUCTORS: INSTALL BARE TINNED-COPPER CONDUCTOR NO. 20 AWG MINIMUM.
- GROUNDING BUS: INSTALL IN ELECTRICAL EQUIPMENT ROOMS, IN ROOMS HOUSING SERVICE EQUIPMENT, AND ELSEWHERE AS INDICATED. INSTALL BUS HORIZONTALLY, ON INSULATED SPACERS 2 INCHES MINIMUM FROM WALL, 6 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED.

6. GROUNDING SEPARATELY DERIVED SYSTEMS

- GENERATOR: INSTALL GROUNDING ELECTRODE(S) AT THE GENERATOR LOCATION. THE ELECTRODE SHALL BE CONNECTED TO THE EQUIPMENT GROUNDING CONDUCTOR AND TO THE FRAME OF THE GENERATOR.
- TESTS AND INSPECTIONS

AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITS HAVE BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

- INSPECT PHYSICAL AND MECHANICAL CONDITION. VERIFY TIGHTNESS OF ACCESSORIES. BOLT ELECTRICAL CONNECTIONS WITH A CALIBRATED TORQUE WRENCH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- TEST COMPLETED GROUNDING SYSTEM AT EACH LOCATION WHERE A MAXIMUM GROUND RESISTANCE LEVEL IS SPECIFIED. AT SERVICE DISCONNECT ENCLOSURE GROUNDING TERMINAL AND AT GROUND TEST WELL. MAKE TESTS AT GROUND RODS BEFORE ANY CONDUCTORS ARE CONNECTED.
- PERFORM TESTS BY FALL-OF-POTENTIAL METHOD ACCORDING TO IEEE 81.

AND SHALL INCLUDE THE FOLLOWING.

2. CONNECT ALL NON-CURRENT CARRYING METAL PARTS SUCH AS METAL CONDUITS, RACEWAYS, OUTLET BOXES, CABINETS, SUPPORTS, AND SIMILAR PARTS OF ALL ELECTRICAL EQUIPMENT AND APPARATUS TO THE GROUNDING SYSTEM.

3. EQUIPMENT GROUNDING CONDUCTORS: COMPLY WITH NEC ARTICLE 250 FOR TYPES, SIZES, AND QUANTITIES OF EQUIPMENT GROUNDING CONDUCTORS, EXCEPT WHERE SPECIFIC TYPES, LARGER SIZES, OR MORE CONDUCTORS THAN REQUIRED BY NEC ARE INDICATED.

260533 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

- LISTING AND LABELING: METAL CONDUITS, TUBING, AND FITTINGS SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- ELECTRIC METALLIC TUBING (EMT) - SHALL COMPLY WITH ANSI C80.3 AND UL179.
- GALVANIZED STEEL RIGID CONDUIT (GRS) - SHALL COMPLY WITH ANSI C80.1 and UL 6.
- METAL CLAD CABLE SHALL COMPLY WITH UL 1569, R90HS, AND WIRE AND CABLE MARKING ACCORDING TO UL'S WIRE AND CABLE MARKING APPLICATION GUIDE.
- MAINTAIN MINIMUM 12 INCH CLEARANCE BETWEEN CONDUIT AND HEAT; SUPPORT RIGID METALLIC CONDUIT AT A MAXIMUM OF 10 FEET ON CENTER. SUPPORT FLEXIBLE METALLIC CONDUIT AT DISTANCES NOT EXCEEDING NEC RECOMMENDATIONS FOR SPECIFIC CONDUIT TYPES INSTALLED.
- WHERE CONDUIT PENETRATES A WALL, THE PENETRATION SHALL BE SEALED WATER-TIGHT.

CONDUIT ENTRY TO ENCLOSURES, PULLBOXES, OR EQUIPMENT SHALL BE VIA CONDUIT HUB - LISTED FOR INSTALLATION WITH RACEWAY SYSTEM. DOUBLE LOCKNUTS ARE NOT SUITABLE FOR RACEWAY ENTRIES.

BOXES

- PROVIDE ELECTRICAL BOXES AS REQUIRED FOR SPLICES, TAPS, EASE OF WIRE PULLING, EQUIPMENT CONNECTIONS, AND CODE COMPLIANCE. WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS, VERIFY AND COORDINATE THE LOCATION OF ALL BOXES AND OUTLETS WITH OTHER TRADES.

SURFACE RACEWAY/WIREWAY

- PROVIDE METALLIC, PREFINISHED SURFACE MOUNTED RACEWAY/WIREWAY. WIREMOLD MODEL 500/700. COORDINATE COLOR WITH OWNER.
- MANUFACTURERS:
 - ACCEPTABLE MANUFACTURER: WIREMOLD(R), MODEL 500/700, LOCATED AT: 60 WOODLAWN ST., WEST HARTFORD, CT 06110; TOLL FREE TEL: 800-421-0049; TEL: 877-285-3472; FAX: 860-232-2082; EMAIL: REQUEST INFO (CUSTOMER.SUPPORT@WMLEGRAND.US); WEB: WWW.LEGRAND.US/WIREMOLD.ASPX
 - REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SECTION 01 60 - PRODUCT REQUIREMENTS, AND SHOULD INCLUDE DOCUMENTATION OF ALL APPLICABLE CODES AND OTHER ITEMS CONNECTED.
- SURFACE MOUNTED RACEWAYS:
 - GENERAL:
 - SYSTEM: PROVIDE SURFACE RACEWAY SYSTEMS FOR BRANCH CIRCUIT AND OTHER LOW-VOLTAGE WIRING.
 - DRY-DRYERS, SIGHT GLASS, EXPANSION VALVES GAUGE COCKS AND THERMOMETER WELLS, PER MANUFACTURERS REQUIREMENTS, REFERENCE SHALL COMPLY WITH ANSI STANDARD B31.5, AND ASTM E280. INSTALL PIPING ACCORDING TO ASHRAE 15 AND EQUIPMENT MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - REFRIGERANT PIPING SHALL BE TYPE ACR, BRAZED JOINTS, WROUGHT COPPER SWEAT FITTINGS. JOINTS SHALL BE MADE WITH LEAD FREE SOLDER.
 - ISOLATION VALVES SHALL BE FULL PORT REFRIGERANT BALL VALVES WITH SCHRADER PORTS.
 - REFRIGERANT PIPING INSULATION:
 - SURFACE-BURNING CHARACTERISTICS: FOR INSULATION AND RELATED MATERIALS, AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 84, BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. FACTORY LABEL, INSULATION AND JACKET MATERIALS AND ADHESIVE, MASTIC, TAPES, AND CEMENT MATERIAL CONTAINERS, WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
 - INSULATION INSTALLED INDOORS OR OUTDOORS: FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS.
 - FLEXIBLE ELASTOMERIC INSULATION: CLOSED-CELL, SPONGE-OR EXPANDED-RUBBER MATERIALS, COMPLY WITH ASTM C 534, TYPE I FOR TUBULAR MATERIALS.
 - MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - Aeroflex USA, Inc.
 - Armacell LLC.
 - K-Flex USA
 - MINERAL-FIBER, PIPE: MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN, COMPLY WITH ASTM C1398.
 - MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - CERTAIN TEED
 - JOHNS MANVILLE
 - OWENS CORNING

262126 WIRING DEVICES

- RECEPTACLES SHALL BE SPECIFICATION GRADE. THE FACE AND BACKBODY OF THE RECEPTACLE SHALL BE OF HIGH-IMPACT THERMOPLASTIC. THE CONTACTS SHALL BE TRIPLE WIRE, T-SLOT, ONE-PIECE COPPER ALLOY DESIGN. THE RECEPTACLE SHALL INCLUDE A GREEN GROUND SCREW ATTACHED TO THE INTO THE BODY OF THE RECEPTACLE. RECEPTACLES SHALL BE RATED 20-AMPERE, 125-V AC, NEMA CONFIGURATION 5-20R, SIDE WIRED. COLOR TO BE COORDINATED WITH OWNER.
- GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES (GFCI) SHALL HAVE A NYLON FACE AND A THERMOPLASTIC CONTACT BODY. GFCI RECEPTACLES SHALL BE UL CLASS A WITH A 5-MILLIAMPERE, GROUND-FAULT TRIP LEVEL. GFCI RECEPTACLES SHALL BE RATED 20-AMPERE, 125-V AC, NEMA CONFIGURATION 5-20R, SIDE WIRED. COLOR TO BE COORDINATED WITH OWNER.
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- GENERAL USE WALL PLATES SHALL BE TYPE 430 BRUSHED STAINLESS STEEL. THE PLATE SHALL BE OF A MODERN DESIGN WITH ROUNDED EDGES AND CORNERS, ENGRAVING, WHERE REQUIRED, SHALL BE DONE BY THE PLATE MANUFACTURER IN ACCORDANCE WITH THE ENGRAVING REQUESTED BY OWNER.
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260553 IDENTIFICATION OF ELECTRICAL SYSTEMS

- ALL WIRE AND CABLE SHALL BE MARKED. POWER CABLES SHALL BE COLOR CODED AS INDICATED IN THE WIRE AND CABLE SECTION.
- ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON A WHITE BACKGROUND.
- PROVIDE NAMEPLATES TO IDENTIFY ALL ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT, AND LOADS SERVED.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND INDUSTRY STANDARDS.
- EQUIPMENT AS SPECIFIED CONSTITUTES A STANDARD OF QUALITY. OTHER ACCESS TO EQUIPMENT, WARNING LABELS AND SIGNS SHALL INCLUDE THE FOLLOWING: GENERAL:
 - EACH NEW PANELBOARD: "WARNING: POTENTIAL ARC-FLASH HAZARDS EXIST WHILE WORKING ON THIS ENERGIZED EQUIPMENT."
 - WORKSPACE CLEARANCE: "WARNING: OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 42 INCHES."

MECHANICAL

1. REFRIGERANT PIPING:

- HIGH PRESSURE REFRIGERANT 410A - SUCTION LINES 300 PSIG, HOT GAS AND LIQUID LINES 535 PSIG.
- PROVIDE A COMPLETE REFRIGERANT PIPING SYSTEM WITH ALL NECESSARY TUBING, FITTINGS, SHUT-OFF CHARGING VALVES, FILTER-DRYERS, SIGHT GLASS, EXPANSION VALVES GAUGE COCKS AND THERMOMETER WELLS, PER MANUFACTURERS REQUIREMENTS, REFERENCE SHALL COMPLY WITH ANSI STANDARD B31.5, AND ASTM E280. INSTALL PIPING ACCORDING TO ASHRAE 15 AND EQUIPMENT MANUFACTURERS INSTALLATION INSTRUCTIONS.
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2. REFRIGERANT PIPING INSULATION

- SURFACE-BURNING CHARACTERISTICS: FOR INSULATION AND RELATED MATERIALS, AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 84, BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. FACTORY LABEL, INSULATION AND JACKET MATERIALS AND ADHESIVE, MASTIC, TAPES, AND CEMENT MATERIAL CONTAINERS, WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
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3. FASTEN HANGER RODS, CONDUIT CLAMPS, AND OUTLET AND JUNCTION BOXES TO BUILDING STRUCTURE USING PRECAST INSERT SYSTEM, EXPANSION ANCHORS, PRESET INSERTS, BEAM CLAMPS.

4. USE TOGGLE BOLTS OR HOLLOW WALL FASTENERS IN HOLLOW MASONRY, PLASTER, OR GYPSUM BOARD PARTITIONS AND WALLS; EXPANSION ANCHORS OR PRESET INSERTS IN SOLID MASONRY WALLS; SELF-DRILLING ANCHORS OR EXPANSION ANCHORS ON CONCRETE SURFACES; SHEET METAL SCREWS IN SHEET METAL STUDS; AND WOOD SCREWS IN WOOD CONSTRUCTION.

5. DO NOT FASTEN SUPPORT TO PIPING, DUCTWORK, MECHANICAL EQUIPMENT, OR CONDUIT. DO NOT DRILL STRUCTURAL STEEL MEMBERS.

6. INSTALL SURFACE MOUNTED EQUIPMENT, CABINETS, AND PANELBOARDS WITH MINIMUM OF 4 ANCHORS, PROVIDE STEEL CHANNEL SUPPORT TO STAND ENCLOSURE 1 INCH OFF WALL.

7. SUPPORT SYSTEMS SHALL BE ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT, CONDUIT, & WIRING THAT IT CARRIES.

262126 WIRING DEVICES

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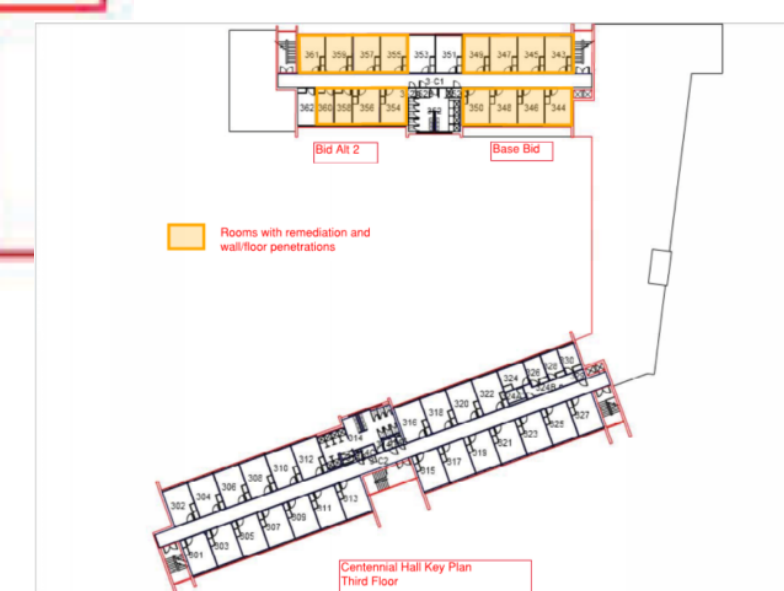
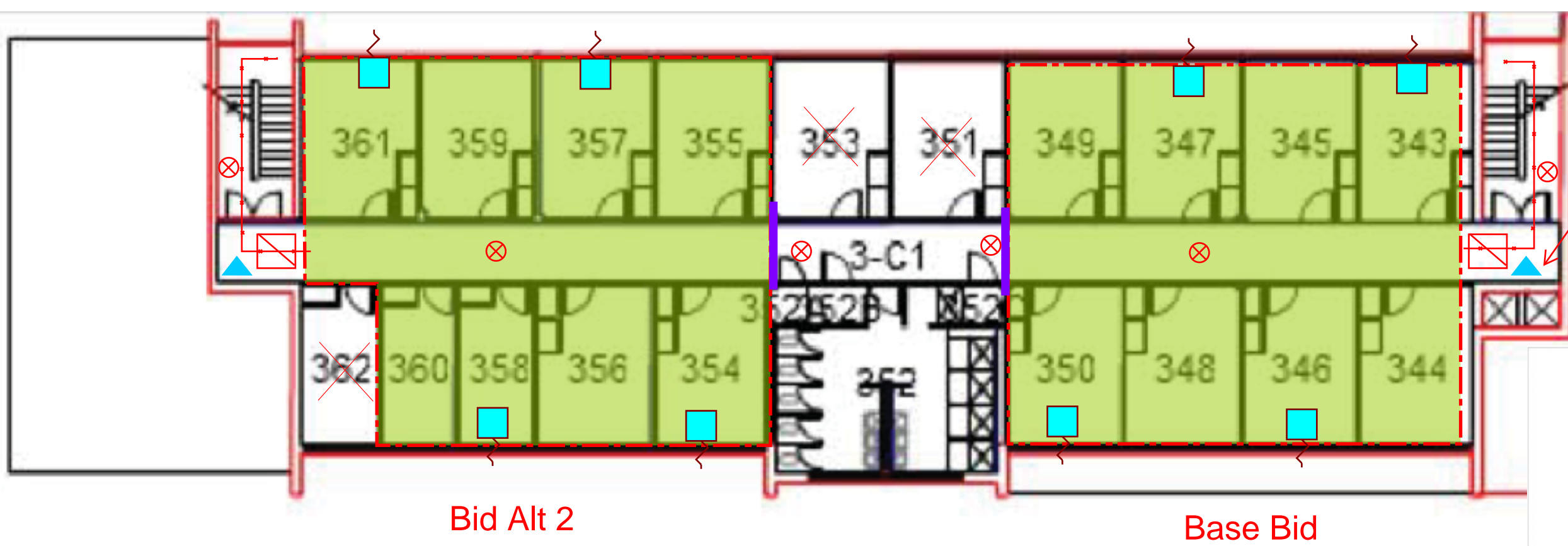
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262126 WIRING DEVICES

- RECEPTACLES SHALL BE SPECIFICATION GRADE. THE FACE AND BACKBODY OF THE RECEPTACLE SHALL BE OF HIGH-IMPACT THERMOPLASTIC. THE CONTACTS SHALL BE TRIPLE WIRE, T-SLOT, ONE-PIECE COPPER ALLOY DESIGN. THE RECEPTACLE SHALL INCLUDE A GREEN GROUND SCREW ATTACHED TO THE INTO THE



Bid Alt 2

Base Bid

ACM Tile and Mastic Removal of 2 square feet per room and ACM Plaster from Exterior Soffit:

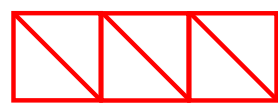
- Base Bid - 16 rooms, 2 square feet tile and mastic removal per room
Soffit - 4 locations (approximately 4 square feet per location)
- Alt #1 - 8 rooms, 2 square feet tile and mastic removal per room
Soffit - 2 locations (approximately 4 square feet per location)
- Alt #2 - 8 rooms, 2 square feet tile and mastic removal per room
Soffit - 2 locations (approximately 4 square feet per location)

A. The scope of the project includes the complete removal and proper off-site disposal of identified asbestos-containing floor tile and mastic in Centennial Hall in multiple rooms located on the TCNJ campus at 2000 Pennington Road, Ewing Township, New Jersey and as described in this specification and accompanying drawings in preparation for summer renovations. All abatement activities shall be accomplished utilizing non-friable methods. The Contractor shall remove selected floor tile and associated mastic (approximately 2 square feet per room) from marked areas in multiple rooms throughout the building as indicated on the drawings. The removal of mastic shall be conducted via no odor solvents utilizing hand-held deck brushes. The use of floor buffing machines for the removal of the mastic will not be permitted.

The areas for removal will be marked out prior to the commencement of on-site abatement activities.

The provided drawings indicate floor and room locations. Each area will have critical barriers installed with negative pressure. Contractor is to have a manometer on-site to verify that negative pressure is being established. A one stage decon will be installed at the entrance of each work area. A remote decon area will be designated by TCNJ at the time of award.

Exterior soffit will need to have approximately 4 square feet removed to allow installation of conduit into the building. Areas will be marked prior to on-site removal. Exterior soffit removal locations are marked on drawings provided. Contractor will need to protect ground surfaces from falling debris. Contractor is to seal adjacent windows with poly prior to removal.



Remote decon

LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- POLY SEPERATION BARRIER
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR FULL CONTAINMENT
- 1 STAGE DECONTAMINATION UNIT

Pennoni

PENNONI ASSOCIATES INC.
515 Grove Street, Suite 1B
Haddon Heights, NJ 08035
T 856.547.0505 F 856.547.9174

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THE COLLEGE OF NEW JERSEY
2000 PENNINGTON ROAD
EWING, NEW JERSEY 08628
CENTENNIAL HALL
ACM ABATEMENT AREA
Third Floor - Base and Alternate Areas

PROJECT	TCNJX19001
DATE	01/21/20
DRAWING SCALE	NTS
DRAWN BY	BDC
APPROVED BY	
	ASB-1
	SHEET 1 OF 3



ACM Tile and Mastic Removal of 2 square feet per room and ACM Plaster from Exterior Soffit:

- Base Bid - 16 rooms, 2 square feet tile and mastic removal per room
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Remote decon

LEGEND

-  3 STAGE DECONTAMINATION UNIT
-  AIR SAMPLING LOCATION
-  AIR FILTRATION UNIT
-  MANOMETER LOCATION
-  EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
-  SEPARATION BARRIER
-  WORKER INGRESS/EGRESS
-  WORK AREA LIMITS FOR FULL CONTAINMENT
-  WASTE ROUTE
-  1 STAGE DECONTAMINATION UNIT
-  POLY SEPERATION BARRIER



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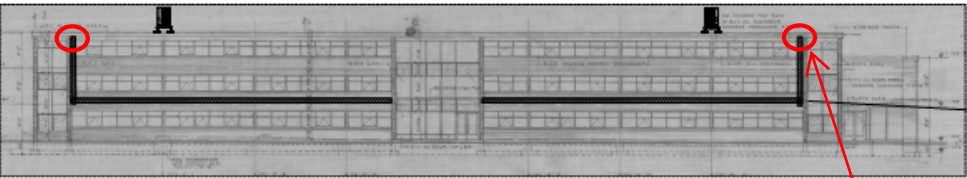
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THE COLLEGE OF NEW JERSEY
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CENTENNIAL HALL
ACM ABATEMENT AREA
Second Floor - Base and Alternate Areas

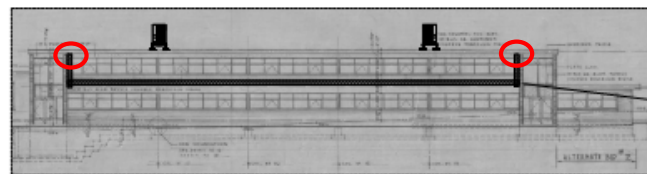
PROJECT	TCNJX19001
DATE	01/21/20
DRAWING SCALE	NTS
DRAWN BY	BDC
APPROVED BY	
	ASB-2
	SHEET 2 OF 3



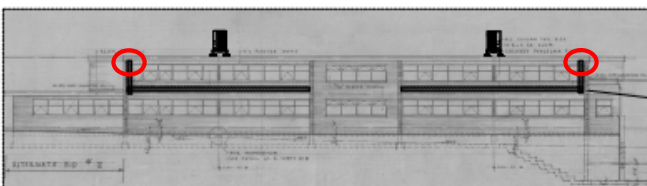
1 EAST WING WEST ELEVATION
Scale: 1/8" = 1'-0"



2 EAST WING EAST ELEVATION
Scale: 1/8" = 1'-0"



3 WEST WING WEST ELEVATION
Scale: 1/8" = 1'-0"



4 WEST WING EAST ELEVATION
Scale: 1/8" = 1'-0"

Approximate locations of soffit penetrations around building



Remote decon

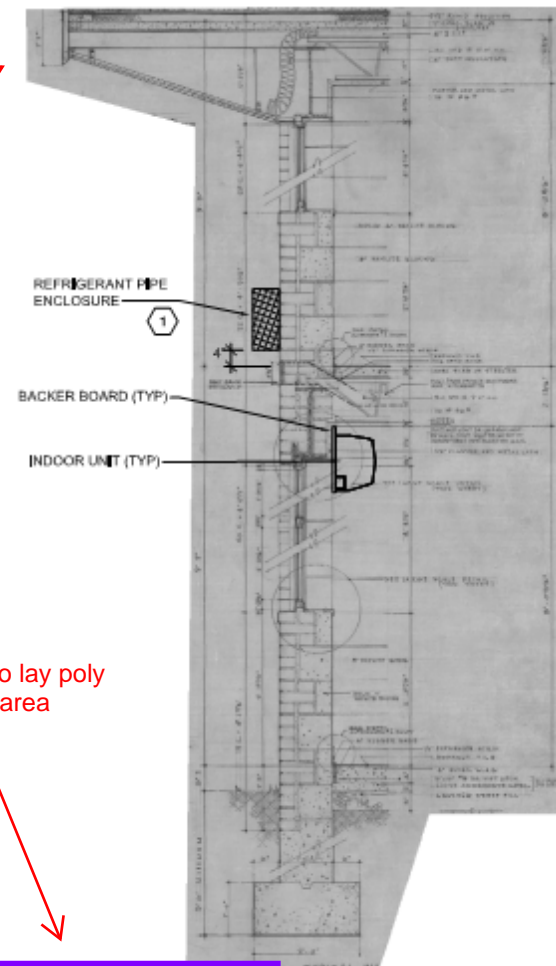
Remove approximately 4 sq ft of soffit for GC to install conduit. GC to mark areas prior to removal.

Contractor to access area with scissor lift or other pre-approved method.

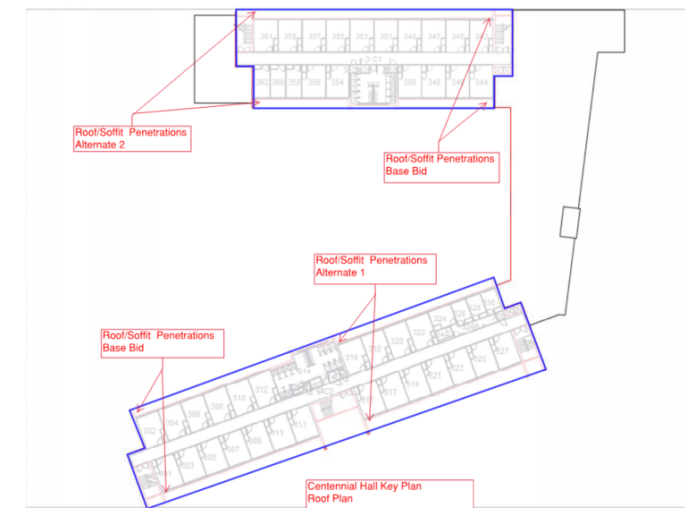
Removal shall be done with HEPA shrouded equipment or approved alternative method.

Windows adjacent to these penetration areas will need to have sealed on the interior with poly

TYPICAL



Contractor to lay poly below work area



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EWING, NEW JERSEY 08628
CENTENNIAL HALL
ACM ABATEMENT AREA
Exterior Penetrations

PROJECT	TCNJX19001
DATE	01/21/20
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SHEET 3 OF 3	