

# Existing Bleacher Repairs & Related Work

TCNJ Advertised Bid # AB220038

**COVER SHEET** 

# **INVITATION TO BID**

## **MILESTONE SCHEDULE**

# **CONSTRUCTION BID PROPOSAL FORM**

## **GENERAL WORK DESCRIPTION**

# DRAWINGS

# CONTRACT

# MANDITORY DOCUMENTS

# **GENERAL CONDITIONS**

MAY 2, 2022



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 **May 1, 2022 in the Trentonian.** Contact person regarding placement of ad is Anup Kapur (609) 771-2495.

#### THE COLLEGE OF NEW JERSEY ADVERTISEMENT FOR BIDS BID #AB220038

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 Existing Bleacher Repairs & Related Work project until **2:00 P.M. on the 25th day of May, 2022** 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 May 2, 2022 via our website (https://bids.tcnj.edu/home/construction-projects/).

Bidders are encouraged to attend the **pre-bid conference/on-site inspection on May 10, 2022** at 10:00 a.m. at the College's Administrative Services Building, Room 203.

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

#### Bidders must possess one of either a New Jersey Department of Treasury, Division of Property Management and Construction (DPMC) C008 or C009 classification at time of bid. No bids will be accepted without this classification.

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.



# Existing Bleacher Repairs and Related Work

Milestone Schedule May 2, 2022

Advertised for bidding	May 2, 2022
Pre-Bid Meeting @ 10:00am ASB 203	May 10, 2022
Cut-off for questions	May 13, 2022
Addendum Issued	May 16, 2022
Bids Received (2:00 pm)	May 25, 2022
Notice of Intent to Award issued by	May 27, 2022
End of Protest Period	June 3, 2022
Notice to proceed issued	June 7, 2022
Start Construction in the field	June 13, 2022
Substantial Completion: Lions Stadium	August 26, 2022
Lacrosse/Field Hockey	August 26, 2022
Baseball	August 26, 2022
Softball	September 30, 2022
Track	November 18, 2022
Project Closeout by:	December 30, 2022

#### 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: AB220038 Bid Due Date: May 25, 2022

#### Project Name: Existing Bleacher Repairs & Related Work

#### **BIDDER INFORMATION**

Firm Name:

Telephone Number:

Contact Person: Address: Fax Number:

Email Address: Federal I.D. Number:

#### SOLICITATION OF CONSTRUCTION BIDS

1. Bid proposals are solicited as follows:

- A. Single Bid (Lump Sum) which combines all trades.
  - (1) The total number and types of trades are set forth in the Specifications.
  - (2) Bidder enters the Bid Price on the line provided.
  - (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 repairs to the existing bleachers and adjacent areas to Lion Stadium, Lion Track, Baseball Field, Softball Field and Lacrosse Field.
  - 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.
  - 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)
- **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)
    - $\Box$  Asian American
    - □ Multiple Ethnicities
    - □ Non-Minority
    - □ Hispanic American
    - $\Box$  African American
    - □ Caucasian American Female
    - $\Box$  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 and submits the Statement of Ownership Disclosure form and the Non-Collusion Affidavit form along with bid proposal.

7. Bidders are required to be registered with the New Jersey Department of Property Management and Construction (DPMC) and possess a DPMC C008 or C009 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 <u>http://lwd.dol.state.nj.us/labor/wagehour/wagerate/wage\_rates.html</u> 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 <u>N.J.S.A.</u> 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, (<u>N.J.S.A.</u> 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 <u>N.J.S.A.</u> 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 email to dapolito@tcnj.edu and must be received prior to 4:00 p.m., on May 13, 2022.
- **B.** Should any questions be received, a notice will be placed in the newspaper and the addendum or clarification will be available on May 16, 2022 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., May 25, 2022, to The College of New Jersey, Attention: Anup Kapur 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) <u>New Jersey Statutes and Regulations</u>

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) <u>Federal Statutes</u>

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 <u>Bidder's Checklist</u> 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 Statement.
- 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 17:27-1.1 et seq).
- **h.** Bidder has enclosed its MWBE information.
- i. Bidder has enclosed its Electrical and Plumbing License and any other licenses, certifications, certifications, and qualifications.
- j. \_\_\_\_Bidder has enclosed its Vendor Qualification Statement
- **k.** <u>Bidder has included a copy of its latest Experience Modification Rating</u> (EMR Safety Rating). The College requires an average rating over the last 5 years of 1.25 or less.
- I. \_\_\_\_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. Bidder has completed and enclosed the 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.

Respectfully submitted,

(Seal if bid is by Corporation)

(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: Existing Bleacher Repairs and Related Work

Date

A. 1. Base:

Part-A (Existing Bleacher Repairs & Related Work): \$\_\_\_\_\_

Part-B (Allowance): \$20,000.00

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:

#### Total of Part A and B (including allowance)

(words)

\_Dollars \$\_\_\_\_\_

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

#### Allowance:

Contractors will include in their bids an allowance of \$20,000 to be used for unforeseen conditions or design enhancements. Any unused allowance shall be deducted from the contract via a deduct change order.

#### 2. Add /Deduct Alternate: None

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: None.

3.

- 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 a wage rates, and hours of la	grees to comply with the re-	equirements as to conditions of employment, t Documents.
Dated			
Firm Name			Phone Number:
Address			
**If a corpo "A corpo If a partr "Co-part If an ind	oration, give the State of In oration organized under the nership, give names of the p ners trading and doing bus ividual using a trade name,	corporation, using the phra laws of partners, using also the phra iness under the firm name a give individual name, also	se: use: und style of using the phrase:
"An indi	vidual doing business unde	er the firm name and style of	t
STATE	OF		
COUNT	Y OF	SS.	
proposal any way Sworn a	are in all respects true, and in this proposal. nd subscribed before me	being duly swor I that no member of the Stat	n say that the several matters stated in this are or employee of the College are interested in
••	day of	Bidder s	igns above line
tnis	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:	
T.1	
i elepnone:	
Fax:	

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

#### **Security Systems**

List information f	or 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:	

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 \_\_\_\_\_\_female-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 AL	L MEN	BY	THESE	PRESE	NTS,	that we,	the und	ersigne	d			
		as	Principa	l, and				-				, а
corporation of	of the Sta	te of	-	_		, dul	y authoriz	ed to d	o business	s in the Stat	e of New	Jersey,
having an o	office at	-					-		, a	re hereby	held and	firmly
bound u	unto	The	Colle	ge	of	New	Jersey	in	the	Penal	Sum	of
				-			-		DOLLA	ARS, for pa	ayment of	f which
well and tru	ly to be	made	, we herel	oy joint	ly and	severally	bind ours	selves,	our heirs	, executors	, adminis	strators,
successors an	nd assigr	ıs.										
SIGNED this	S		day of				, 20					
THE COND	ITION (	)F TH	IE ABOV	E OBLI	IGATI	ON IS SI	ICH THA	T WF	IEREAS	the above	named P	rincinal
did on the		dav	of		10/111	20	ente	r into a	written c	ontract wit	h The Co	llege of
New Jersev	for	_ aay	···			, 20	, ente	v nito u	which said	l contract i	s made a	part of
this bond as	set forth	hereii	n;									1
NOW, if the	e said									shall w	ell and fa	ithfully
												2

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

	BY:
Witness	
	BY:
Witness as to Surety	ATTORNEY-IN-FACT
Countersigned	
	NOTE: General Power of Attorney and the current

duy 01 , 20	this	day of	, 20
-------------	------	--------	------

BY:

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

#### SURETY DISCLOSURE STATEMENT AND CERTIFICATION

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

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

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

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

(4) The amount of the bond to which this statement and certification is attached is \$\_\_\_\_\_

- (5) If, by virtue of one or more contracts of reinsurance, the amount of the bond indicated under item (4) above exceeds the total underwriting limitation of all sureties on the bond as set forth in items (3) (a) or (3) (b) above, or both, then for each such contract of reinsurance:
  - (a) The name and address of each such re-insurer under that contract and the amount of that re-insurer's participation in the contract is as follows:

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

#### CERTIFICATION

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

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

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

a corporation/mutual insurance company/other (indicate type of business organization by circling one) domiciled in \_\_\_\_\_

\_\_\_\_\_ (state of domicile), DO HEREBY CERTIFY that, to the best of my knowledge, the foregoing statements made by me are true, and ACKNOWLEDGE that, if any of those statements are false, this bond is VOID and I am subject to punishment.

(Signature of certifying agent)

(Printed name of certifying agent)

(Title of certifying agent)

(Date of Certification)

# **PROJECT MANUAL**



#### **EXISTING BLEACHER REPAIRS AND RELATED WORK**

FOR

**THE COLLEGE OF NEW JERSEY** 2000 PENNINGTON ROAD EWING, NJ 08628

### **ISSUED FOR BID / PERMIT**

**TCNJ Project Number XX243** Commission Number: 21U019

Date: May 2, 2022

# SPIEZLE ARCHITECTURAL GROUP, INC.



## **PROJECT MANUAL**

#### **EXISTING BLEACHER REPAIRS AND RELATED WORK**

FOR

#### THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD EWING, NJ 08628

#### **ARCHITECT:**

SPIEZLE ARCHITECTURAL GROUP, INC. 1395 YARDVILLE-HAMILTON SQUARE ROAD SUITE 2A	
TELEPHONE NUMBER: (609) 695-7400	
FAX NUMBER: (609) 394-2274	
NEW JERSEY LICENSED ARCHITECT 21AC00063000 21AI01294900 21AI01505400 21AI01439400 21AI01674400 21AI01784200	SEAL & SIGNATURE

#### COMMISSION NO. 20U019

#### **PROJECT MANUAL**

#### EXISTING BLEACHER REPAIRS AND RELATED WORK

FOR

THE COLLEGE OF NEW JERSEY 2000 PENNINGTON ROAD EWING, NJ 08628

#### **TABLE OF CONTENTS**

#### <u>NUMBERS</u> <u>TITLES</u>

PAGES

#### VOLUME 1 OF 1:

#### **<u>DIVISION 01</u>** <u>GENERAL REQUIREMENTS</u>

Section	000115	Contract Drawings	000115-1
Section	011000	Summary	011000-1 to 011000-5
Section	012100	Allowances	012100-1 to 012100-2
Section	012200	Unit Prices	012200-1 to 012200-3
Section	012300	Alternates	012300-1 to 012300-2
Section	012500	Substitution Procedures	012500-1 to 012500-4
Section	012600	Contract Modification Procedures	012600-1 to 012600-3
Section	012900	Payment Procedures	012900-1 to 012900-5
Section	013100	Project Management and Coordination	013100-1 to 013100-13
Section	013200	Construction Progress Documentation	013200-1 to 013200-8
Section	013233	Photographic Documentation	013233-1 to 013233-3
Section	013300	Submittal Procedures	013300-1 to 013300-10
Section	014000	Quality Requirements	014000-1 to 014000-10
Section	014200	References	014200-1 to 014200-4
Section	015000	Temporary Facilities and Controls	015000-1 to 015000-8
Section	016000	Product Requirements	016000-1 to 016000-8
Section	016600	Storage and Handling Requirements	016600-1 to 016600-2
Section	017300	Execution	017300-1 to 017300-7
Section	017329	Cutting and Patching	017329-1 to 017329-5
Section	017419	Construction Waste Management and Disposal	017419-1 to 017419-4
Section	017700	Closeout Procedures	017700-1 to 017700-5
Section	017823	Operation and Maintenance Data	017823-1 to 017823-5
Section	017839	Project Record Documents	017839-1 to 017839-3
Section	017900	Demonstration and Training	017900-1 to 017900-5

#### TECHNICAL SPECIFICATIONS

**NUMBERS** 

## <u>PA</u>

#### PAGES

#### **<u>DIVISION 02</u>** EXISTING CONDITIONS

**TITLES** 

Section	023000	Subsurface Investigation	023000-1
Section	024119	Selective Demolition	024119-1 to 024119-9
Section	024120	Selective Site Demolition	024120-1 to 024120-7

#### DIVISION 03 CONCRETE

Section 033000	Cast in Place Concrete	033000-1 to 033000-8
DIVISION 04	MASONRY	

Section	040120	Maintenance of Unit Masonry	040120-1 to 040120-9
Section	047200	Cast Stone Masonry	042000-1 to 042000-8

#### DIVISION 05 METALS

Section 055010	Miscellaneous Metals	055010-1 to 055010-9
<b>DIVISION 06</b>	WOOD, PLASTICS, AND COMPONENTS	
Section 062013	Exterior Finish Carpentry	062013-1 to 062013-5
DIVISION 07	THERMAL AND MOISTURE PROTECTION	
Section 079200	Joint Sealants	079200-1 to 079200-7
<b>DIVISION 08</b>	<u>OPENINGS</u>	
NOT USED		
<b>DIVISION 09</b>	<u>FINISHES</u>	
NOT USED		
<b>DIVISION 10</b>	<u>SPECIALTIES</u>	
TBD		
DIVISION 11	EQUIPMENT	
NOT USED		
DIVISION 12	FURNISHINGS	

#### EXISTING BLEACHER REPAIRS & RELATED WORK THE COLLEGE OF NEW JERSEY 21U019

#### NOT USED

#### **DIVISION 13** SPECIAL CONSTRUCTION

Section 131260 Aluminum Bleacher Seating Assemblies

131260-1 to 131260-4

#### DIVISION 21 FIRE SUPPRESSION

NOT USED

#### **DIVISION 22** PLUMBING

NOT USED

#### DIVISION 23 HEATING VENTILATING AND AIR CONDITIONING

NOT USED

#### DIVISION 26 ELECTRICAL

NOT USED

#### DIVISION 27 COMMUNICATIONS

NOT USED

#### DIVISION 31 EARTHWORK

Section 311000	Site Clearing	311000-1 to 311000-6
Section 312000	Earth Moving	312000-1 to 312000-9
DIVISION 32	EXTERIOR IMPROVEMENTS	

Section	321216	Asphalt Paving	321216-1 to 321216-8
Section	323119	Decorative Metal Fences and Gates	323119-1 to 323119-6

#### **DIVISION 33** UTILITIES

NOT USED

#### END OF TABLE OF CONTENTS

#### SECTION 000115 - CONTRACT DRAWINGS

Drawings listed below provide for complete construction of this Project and are part of the Contract Documents.

#### DWG. NO. TITLE

CS.1	COVER SHEET
CS.2	NOTES, ABBREVIATIONS AND LIST OF DRAWINGS
ABP.D1.1	ACKERMAN BASEBALL PARK DEMOLITION PLANS
FL.D1.1	FIELD HOCKEY AND LACROSSE COMPLEX DEMOLITION PLANS
JW.D1.1	JUNE WALKER SOFTBALL FIELD DEMOLITION PLANS
LS.D1.1	LIONS STADIUM DEMOLITION PLANS
LT.D1.1	LIONS TRACK DEMOLITION PLANS
ABP.A1.1 FL.A1.1 JW.A1.1 LS.A1.1 LT.A1.1 LT.A1.1 LTA1.2	ACKERMAN BASEBALL PARK FLOOR PLANS FIELD HOCKEY AND LACROSSE COMPLEX FLOORPLANS JUNE WALKER SOFTBALL FIELD DEMOLITION PLANS LIONS STADIUM DEMOLITION PLANS LIONS TRACK DEMOLITION PLANS LIONS TRACK DETAILS
LT.E0.1	ELECTRICAL LEGEND AND NOTES

- LT.E0.2 ELECTRICAL SPECIFICATIONS
- LT.ED1.1 ELECTRICAL PARTIAL DEMOLITION SITE PLAN
- LT.E1.2 ELECTRICAL PARTIAL SITE PLAN
- LT.E2.1 ELECTRICAL DETAILS, SCHEDULES, AND NOTES

The Architect may furnish additional drawings as may be required for further explanation of details for work under this Contract, but these drawings will not include shop drawings. Shop Drawings shall be completed and submitted for Architect's review for compliance with the contract documents prior to the starting of work by the Contractor, as specified herein.

END OF SECTION 000115

#### SECTION 011000 - SUMMARY

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 00 and 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The project includes work at The College of New Jersey Campus in Ewing, NJ. The Contractor will be required to secure permits from the State of New Jersey's Department of Consumer Affairs.
- B. The project generally includes renovations, repairs and replacements to masonry structures and metal fencing and railings at various athletic facilities on the campus. The work will generally consist of masonry repairs and replacement, modification of existing bleacher systems and installation of new bleacher seating
- C. This Section includes the following:
  - 1. Work covered by the Contract Documents.
  - 2. Type of the Contract.
  - 3. Work under other contracts.
  - 4. Use of premises.
  - 5. Owner's occupancy requirements.
  - 6. Work restrictions.
  - 7. Specification formats and conventions.

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification:

EXISTING BLEACHER REPAIRS AND RELATED WORK TCNJ PROJECT NUMBER XX243 ARCHITECT'S COMMISSION NO. 21U019

- B. Owner: THE COLLEGE OF NEW JERSEY 2000 PENNINGTON ROAD EWING, NJ 08628
  - 1. Owner's Representative:

Mr. David Jurkin, Project Manager

#### THE COLLEGE OF NEW JERSEY 2000 PENNINGTON ROAD EWING, NJ 08628

#### C. Architect:

SPIEZLE ARCHITECTURAL GROUP, Inc. 1395 Yardville-Hamilton Square Road Hamilton, New Jersey, 08691

#### 1.4 TYPE OF CONTRACT

A. Project will be constructed under a single prime Contract.

#### 1.5 WORK PHASES

- A. The Work Shall be constructed in a single phase as described in the Project Manual and indicated on the Contract Drawings
- B. Project Substantial Completion: Work will commence within Ten (10) Calendar Days after receipt of written "Notice to Proceed" and be substantially completed in accordance with the Contract Documents and Contractor's Construction Schedule for **Substantial Completion** of the entire project by the dates indicated above. All time limits stated in the Contract are of the essence.
- C. The campus, site and buildings will be open and operational throughout the duration of this contract. Contractor shall have access to the work area during normal working hours, but will be responsible to coordinate with the College's operations. Noisy or potentially disruptive work shall be coordinated with class schedule and events. The Work area must remain protected and safe.
- D. Note: the Contractor is strongly encouraged to expedite submittals and ordering of products and long-lead items well in advance of mobilizing to the project site.
- E. The Contractor is encouraged to perform disruptive work while classes are not in session, during breaks, etc.

#### 1.6 WORK UNDER SEPARATE CONTRACT

A. All work indicated on the drawings and within the specifications, unless noted otherwise, shall be performed under this contract. Work at the Lions Track will involve delivery and installation of a prefabricated structure that is being purchased by the owner. The contractor will be expected to coordinate their activities with the owner's forces during preparation and installation work.

#### 1.7 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- B. Use of Site: Limit use of premises to designated work areas within the Contract limits indicated with least amount of disturbance. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations on site to areas where work is required to complete scope of work defined in the Project Manual and Drawings.
  - 2. Owner Occupancy: Allow for Owner occupancy of the areas adjacent to the Project site.
  - 3. Driveways and Entrances: Keep driveways, parking areas, loading areas and entrances serving premises clear and available to Owner, Owner's employees, the public and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
    - c. The Contractor is not permitted to use any parking spaces designated for the Owner's staff or visitors without Owner's written permission. Contractor shall review available on-site parking locations prior to submitting its bid.
- C. Maintain existing electrical service throughout construction period. Repair damage caused by construction operations. Protect property and persons in the project area during construction period.
- D. Removal of non-fixed, movable items will be completed by the Owner prior to the start of construction. Fixed or built-in items shall be removed and/or salvaged, and relocated, by the General Contractor and disconnects by appropriate trades as indicated and/or directed and as required to perform the work.
- E. All Personnel shall dress in clothing appropriate to the work they perform. All personnel are to wear shirts, hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.

#### 1.8 OWNER'S OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy and use the buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.
  - 1. Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways, driveways or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
  - 2. Provide not less than seven (7) days' notice to Owner of activities that will affect Owner's operations. Owner reserves the right to stop the work if it interferes with owner's scheduled occupied activities critical to the owner's operations.

#### 1.9 WORK RESTRICTIONS

- A. On-Site Work Hours: Work may be generally performed inside the existing building during the hours of 7:00 a.m. to 4:00 p.m., Monday through Friday, except otherwise indicated. Care should be taken not to interrupt utilities and be aware of sensitivity to noise that may be disruptive.
  - 1. Special Owner Activities: Special activities may be conducted on site during and after regular owner operation hours and on weekends during the duration of the project. At these times the Contractor may have limited access to the facility. The Owner will provide these dates to the Contractor as soon as they are known.
  - 2. Weekend Hours: Saturday from Subject to approval by the Owner and further subject to ordinances and regulations by local and governing authorities having jurisdiction.
  - 3. Evening Hours: Subject to approval by the Owner and further subject to ordinances and regulations by local and governing authorities having jurisdiction.
  - 4. Hours for Utility Shutdowns: Provide minimum of seven (7) days advance notice to Owner if shutdown of service is necessary during change-over in writing, including anticipated hours for utility shutdown.
  - 5. Hours for core drilling and other noisy activities, demolition, etc. shall be planned for the least distracting hours of the day and coordinated with the Owner through the Architect. The Owner reserves the right to stop those activities to be deemed excessive until a more appropriate time or day at their discretion.
  - 6. The Contractor is responsible for maintaining all temporary emergency egress routes. The Contractor shall obtain approval from the Building, Police, Rescue and Fire Departments for all temporary emergency egress routes.
  - 7. The Owner has the right to require disruptive work to be discontinued if affecting the students and employee staff.
- 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 Architect and Owner not less than seven (7) days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Architect's and Owner's written permission.
- C. Smoking: Smoking is prohibited on campus.

#### 1.10 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50division format and CSI/CSC's "MasterFormat" numbering system.
  - 1. Section Identification: The Specifications use Section numbers and titles to help crossreferencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.

- 2. Divisions 00 and 01: Sections in Divisions 00 and 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
### SECTION 012100 - ALLOWANCES

## 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. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
  - 2. Unit-cost allowances.

#### 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

## 1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

## 1.5 LUMP-SUM AND UNIT-COST ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by the Owner under allowance and shall include freight, and delivery to Project site. Do not include taxes.
- B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

#### 3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

#### 3.3 SCHEDULE OF ALLOWANCES

ALLOWANCE No. 1: CONTINGENCY ALLOWANCE. Contractor to include Twenty Thousand Dollars (\$20,000.00) in its base bid proposal to address unforeseen conditions that may be encountered during the course of the construction. Prior to commencing with any work to be billed against this allowance, the Contractor must submit pricing information for review and consideration and receive written direction to proceed from the Architect. Any excess allowance not used at substantial completion will be deducted from the contract. The Contractor shall submit tickets and receipts to substantiate costs incurred for allowance work. This is to be identified as an Allowance on the successful contractor's schedule of values.

1. Upon completion of the project, any of the allowance work not used, shall be credited to the Owner.

END OF SECTION 012100

#### SECTION 012500 - SUBSTITUTION PROCEDURES

# PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for products selected under an allowance.
  - 2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use Form 009315, "Submittal Matrix for Substitution Evaluation as Approved Equal" provided in Project Manual.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.

- b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
- e. Samples, where applicable or requested.
- f. Certificates and qualification data, where applicable or requested.
- g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
- h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- i. Research reports evidencing compliance with building code in effect for Project..
- j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- k. Cost information, including a proposal of change, if any, in the Contract Sum.
- 1. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within (15) days of receipt of request, or (7) days of receipt of additional information or documentation, whichever is later.
  - a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

# 1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

## 1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

## PART 2 - PRODUCTS

#### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than (15) days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within (30) days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to the Contract Documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

## SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

## 1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.
  - 1. Architect will issue notice via AIA Form G710, Architect's Supplemental Instructions.

#### 1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within the time indicated on the Proposal Request, or if not indicated, not to exceed (20) twenty days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Include costs of labor and supervision directly attributable to the change.
    - c. Include delivery charges, equipment rentals, and amounts of trade discounts.
    - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Contractor must receive prior written approval from the Owner prior to performing the Work. Any Work completed without prior approval by the Owner will not be paid.

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - 3. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
  - 4. Include costs of labor and supervision directly attributable to the change.
  - 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  - 6. Contractor must receive prior written approval from the Owner prior to performing the Work. Any Work completed without prior approval by the Owner will not be paid.
- C. Proposal Request Form: Use AIA Document G709 "Work Changes Proposal Request" for Proposal Requests.

## 1.5 CHANGE ORDER PROCEDURES

A. On Owner's and Architect's approval of a Change Order Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 "Change Order".

## 1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 "Construction Change Directive". Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive. The Contractor shall be responsible to obtain verification by the Owner's representative on a daily basis.
  - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

## PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

#### SECTION 012900 – PAYMENT PROCEDURES

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

#### 1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

#### 1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
  - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with Continuation Sheets.
    - b. Submittals Schedule.
    - c. Contractor's Construction Schedule.
    - d. List of Subcontractors.
    - e. List of Products.
    - f. List of principal suppliers and fabricators.
  - 2. Submit the Schedule of Values showing a complete breakdown of labor and materials of all components of the work, including that of the Subcontractors, to Architect within (21) twenty one days of the written Notice to Proceed and no later than (7) seven days before the date scheduled for submittal of initial Applications for Payment. The Schedule of Values shall be subject to the satisfaction of the Architect including that of the Subcontractors listed on the "Contractor's Subcontractor List" before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

- 1. Identification: Include the following Project identification on the Schedule of Values:
  - a. Project name and location.
  - b. Owner's Bid Number.
  - c. Name of Architect.
  - d. Architect's project number.
  - e. Contractor's name and address.
  - f. Date of submittal.
- 2. Submit draft of AIA Document G703 Continuation Sheets.
- 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
  - a. Related Specification Section or Division.
  - b. Description of the Work.
  - c. Allowances.
  - d. Change Orders (numbers) that affect value.
  - e. Dollar value.
    - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, as built documents, closeout documents, and demonstration and training in the amount of (2) two percent of the Contract Sum.
- 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site. Include evidence of insurance.
- 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-inplace may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
- 9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

## 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Supplementary Conditions. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 "Application and Certificate for Payment" and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  - 1. Entries shall match data on the approved Schedule of Values and Contractor's Construction Schedule. Use approved updated schedules if revisions were made.
  - 2. Include amounts of approved Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit (3) three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
  - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. With each Application for Payment submit the following:
  - 1. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment;
    - a. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item;
    - b. When an application shows completion of an item, submit final or full waivers;
    - c. Owner reserves the right to designate which entities involved in the Work must submit waivers;
    - d. Delete subparagraph below and insert a specific form or special requirements where predetermined. See Evaluations;
    - e. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner;
  - 2. Affidavits with respect to the absence of claims and liens as to the payment of all employees and Subcontractors;
  - 3. Certified payroll records for the applicable period submitted directly to Owner;

- 4. Certifications that all Subcontractors have been paid any amount due from any previous progress payment and shall be paid all amounts due from the current progress payment or in a particular case that there exists a valid basis under the terms of the Subcontractor's contract to withhold payment from the Subcontractor (in which case all supporting details shall be provide); and
- 5. other attachments requested.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Schedule of Values.
  - 3. Contractor's Construction Schedule (preliminary if not final).
  - 4. Products list.
  - 5. Submittals Schedule (preliminary if not final).
  - 6. List of Contractor's staff assignments.
  - 7. List of Contractor's principal consultants.
  - 8. Copies of building permits.
  - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  - 10. Initial progress report.
  - 11. Report of preconstruction conference.
  - 12. Certificates of insurance and insurance policies.
  - 13. Performance and payment bonds.
  - 14. Data needed to acquire Owner's insurance.
  - 15. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
  - 3. The maximum value of the Schedule of Values up to and including Substantial Completion is eighty percent (80%) of the total contract sum, including accepted Alternates.
  - 4. Administrative actions and submittals that shall proceed or coincide with this application includes, but is not limited to:
    - a. Occupancy permits and similar approvals.
    - b. Warranties, guarantees, and maintenance agreements.
    - c. Test records.
    - d. Maintenance instructions.
    - e. Final cleaning.
    - f. Application for reduction of retainage, and consent of surety.
    - g. Transfer of insurance coverages.
    - h. List of incomplete work, recognized as exceptions to Architect's Certificate of Substantial Completion.

- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes unless tax exempt, fees, and similar obligations were paid. The Community College is tax exempt.
  - 3. Updated final statement, accounting for final changes to the Contract Sum.
  - 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  - 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  - 6. AIA Document G707, "Consent of Surety to Final Payment."
  - 7. Evidence that claims have been settled.
  - 8. Certification of paid wages in accordance with New Jersey Prevailing Wage Act.
  - 9. Maintenance Bond.
  - 10. Contractor's "As-Built" drawings.
  - 11. Maintenance Manuals and Instructions.
  - 12. Special written guarantees and warranties in addition to the one-year guarantee covered by the Maintenance Bond. Guarantee shall be signed and sealed by an Officer of the Contracting firm and shall be notarized.
  - 13. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  - 14. Final, liquidated damages settlement statement.
  - 15. Completed Punchlist signed and sealed by the Contractor's authorized representative and notarized.
  - 16. Removal of temporary facilities and services.
  - 17. Removal of surplus materials, rubbish and similar materials.
  - 18. All attic stock materials have been delivered to the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

#### SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Field supervision.
  - 2. Coordination.
  - 3. Submittals.
  - 4. Administrative and supervisory personnel.
  - 5. Project meetings.
  - 6. Requests for Information (RFI's).
  - 7. Cleaning and protection.
- B. The contractor and its Subcontractors shall participate in coordination requirements as described herein.

#### 1.3 DEFINITIONS

A. RFI: Request from Contractor seeking information, interpretation or clarification of the Contract Documents.

#### 1.4 FIELD SUPERVISION

- A. The Contractor shall have a full time superintendent present on site to supervise its work and that of its Subcontractors. At no time shall the Contractor or its Subcontractors be working on the Project without the Contractor's superintendent present. The Contractor shall submit the name of its Superintendent to the Architect prior to commencement of work.
- B. Field Supervisor shall be fluent in the English language to ensure full communications can be achieved during daily operations between Contractor, Architect, and Owner.

#### 1.5 COORDINATION

A. Coordination: Contractor shall coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for

proper installation, connection, and operation. The Contractor shall be responsible for being the supervisor, manager, overseer, coordinator and expediter of its Subcontractors. The Contractor shall have included in its bid a sufficient cost amount to furnish such administrative and supervisory duties.

- 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
- 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
- 3. Make adequate provisions to accommodate items scheduled for later installation.
- 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work and activities is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Preinstallation conferences.
  - 7. Project closeout activities.
  - 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
- E. Inspection of Conditions: require the installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do no proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- F. Manufacturer's Instructions: comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- G. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

- H. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion.
- I. Visual Effects: provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- J. Recheck measurements and dimensions, before starting each installation.
- K. Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- L. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- M. Mounting Heights: where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

## 1.6 SUBMITTALS

- A. The Contractor shall submit copies of the minutes of the weekly Coordination Meetings (013100, 1.8.F) to the Owner and Architect on a weekly basis.
- B. Coordination drawings will be prepared in a joint effort by each trade to avoid material and equipment installation interference as well as project delays. The coordination drawings will clearly indicate locations, dimensions, and elevations including, but not limited to, duct work, insulation, mechanical equipment, hot water supply and return piping, fire sprinkler work, electrical fixtures, electrical conduit, structural steel, beams, columns, joist, plumbing piping, plumbing equipment, ceiling grid, penetrations, lintels, etc. Additionally any trade requiring a penetration to be made in wall, floor and or roof shall identify the required opening size and location. The size and type of lintel required for the penetration is also required. Each trade is responsible for laying out their necessary wall, floor or roof penetration.
- C. The Contractor will coordinate a meeting between each trade to finalize the coordination review. Upon the final review as to the accuracy of the coordination drawings, the Contractor's representative who has written authorization from the President of the Company or Corporation to approve and sign-off on the coordination drawings will sign and date the coordination drawings. The General Contractor will then submit copies of the signed and dated coordination drawing to the Architect for review. The signed coordination drawings shall be submitted to the Architect within (30) thirty calendar days from the date of Notice to Proceed. Contractor that fails to furnish completed coordination drawings within the time specified shall be subject to liquidated damages and be financially responsible for removals, repairs, patching, etc. caused by failure to provide coordination drawings at the time needed in coordination with the Contractor's Construction Schedule.
- D. As the work progresses, the Contractor shall familiarize itself with the work to be done by others in so far as it affects its work and shall promptly give such information to others as affects their mutual interests. The Contractor shall notify the Architect of any condition that might prevent the satisfactory completion of their work.

- E. The Contractor shall carefully check job space requirements with all trades to make sure that the combined work can be installed in the allotted spaces, chases, etc., with all piping, conduits, ductwork, etc. concealed from view. Coordination drawings shall be the mutual responsibility of all Contractors and Subcontractors involved. Any Contractor or its Subcontractor not coordinating its work with others will be responsible for any additional costs arising from lack of coordination. In the case of conflict between Prime Contractors and subcontractors, the Architect will have the final decision in accordance with the General Conditions of the Contract for Construction. The Contractor that fails to supply the proper sizes and locations shall be financially responsible for consequential corrective work
- F. Coordination Drawings: Organize coordination drawings as follows.
  - 1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, electrical, fire suppression and security systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  - 2. Sheet Size: At least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  - 3. Number of Copies: Submit eight opaque copies of each submittal, or submit PDF copy of each submittal. The Architect will return one copy.
  - 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
  - 5. Submittals shall include:
    - a. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
    - b. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
    - c. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
    - d. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
    - e. Mechanical and Plumbing Work: Show the following:
      - 1) Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.

- 2) Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
- 3) Fire-rated enclosures around ductwork.
- f. Electrical Work: Show the following:
  - 1) Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
  - 2) Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
  - 3) Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
  - 4) Location of pull boxes and junction boxes, dimensioned from column center lines.
- g. Fire-Protection System: Show the following:
  - 1) Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
- G. Key Personnel Names: Within (10) ten days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
  - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.7 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
  - 1. Include special personnel required for coordination of operations with other contractors.

# 1.8 PROJECT MEETINGS

- A. Job Meetings shall be held at the Site, or elsewhere as designated by the Architect or Owner, for each project at least twice per month on a prescribed date and time of each month, or more often, as directed and required by the Architect or Owner.
- B. It will be mandatory for the President of the Company or Corporation of the Contractor to be present or have its representative present who has written authorization from the President of the Company or Corporation to approve and sign-off on updated Contractors' Construction Schedule, etc. at every Meeting, unless previously excused by the Architect. Non-attendance of any Job Meetings shall result in a deduction of the Contractor's Contract amount of five

hundred (\$500.00) dollars per unattended Meeting. A Contractor more than fifteen (15) minutes late to any meeting shall be viewed as not in attendance.

- C. General: Architect will Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - 1. Attendees: Architect will inform the Owner and Contractors whose presence is required, of date and time of each meeting. Contractor will inform its Subcontractors, suppliers, participants and others involved whose presence is required of scheduled meeting dates and times.
  - 2. Minutes: Architect will record significant discussions and agreements achieved and distribute the meeting minutes to everyone concerned, including Owner, within (7) seven days of the meeting.
- D. Pre-construction Conference
  - 1. Architect shall schedule a Pre-construction Conference and Organizational Meeting at the Project Site or other convenient location no later than fifteen (15) days after execution of the Agreement and prior to commencement of construction activities. The meeting will establish responsibilities and personnel assignments.
  - 2. Attendees: The Owner, the Architect, and their consultants; the Contractor and its superintendent; major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
  - 3. Agenda: Discuss items of significance that could affect progress, including such topics as:
    - a. Tentative construction schedule. Contractor shall bring a draft copy of a Schedule of Construction for review and coordination.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for RFIs.
    - g. Procedures for testing and inspecting.
    - h. Procedures for processing Applications for Payment.
    - i. Distribution of the Contract Documents.
    - j. Submittal procedures.
    - k. Preparation of Record Documents.
    - 1. Use of the premises and existing buildings.
    - m. Work restrictions.
    - n. Owner's occupancy requirements.
    - o. Sequence of work to ensure uninterrupted progress of the facility.
    - p. Responsibility for temporary facilities and controls.
    - q. Construction waste management and recycling.
    - r. Parking availability.
    - s. Office, work, and storage areas.
    - t. Equipment deliveries and priorities.
    - u. First aid.
    - v. Security.
    - w. Progress cleaning.

- x. Working hours.
- 4. Minutes: Architect will record and distribute meeting minutes.
- E. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.
  - 2. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups.
    - i. Possible conflicts.
    - j. Compatibility problems.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written recommendations.
    - n. Warranty requirements.
    - o. Compatibility of materials.
    - p. Acceptability of substrates.
    - q. Temporary facilities and controls.
    - r. Space and access limitations.
    - s. Regulations of authorities having jurisdiction.
    - t. Testing and inspecting requirements.
    - u. Installation procedures.
    - v. Coordination with other work.
    - w. Required performance results.
    - x. Protection of adjacent work.
    - y. Protection of construction and personnel.
  - 3. Installer shall record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Installer shall distribute minutes of the meeting to each party present and to parties who should have been present.
  - 5. <u>Do not proceed with installation</u> if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date
- F. Job Meetings: The Architect or Construction Manager conduct progress meetings at the site or elsewhere as designated by the Architect or Construction Manager for each project at least twice

per month on a prescribed date and time of each month, or more often, as directed and required by the Architect. Coordinate dates of meetings with preparation of payment requests.

- 1. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized, by the president of the company or corporation, to conclude matters relating to the Work.
- 2. Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - 1) Review schedule for next period.
    - 2) Briefly state points to make a matter of record.
  - b. Review present and future needs of each entity present, including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.
    - 3) Status of submittals.
    - 4) Deliveries.
    - 5) Off-site fabrication.
    - 6) Access.
    - 7) Site utilization.
    - 8) Temporary facilities and controls.
    - 9) Work hours.
    - 10) Hazards and risks.
    - 11) Progress cleaning.
    - 12) Quality and work standards.
    - 13) Status of correction of deficient items.
    - 14) Field observations.
    - 15) RFIs.
    - 16) Status of proposal requests.
    - 17) Pending changes.
    - 18) Status of Change Orders.
    - 19) Pending claims and disputes.
    - 20) Documentation of information for payment requests.
- 3. Minutes: Architect will record.
- 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - a. Schedule Updating: The Contractor will revise Contractor's Construction Schedule at least once per month after each job meeting where revisions to the schedule have been made or recognized and when requested by the Architect. Issue revised

schedule concurrently with the report of each meeting or within 4 days of Architect's request.

- G. Coordination Meetings: The Contractor shall conduct mandatory Project Coordination Meetings at least weekly intervals on a prescribed date and time of week, or more often, as directed and required by the Architect. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
  - 1. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting. The Schedule will be reviewed at each regularly scheduled job meeting or when specifically requested by the Architect.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.
      - 10) Hazards and risks.
      - 11) Progress cleaning.
      - 12) Quality and work standards.
      - 13) Change Orders.
      - 14) Review and establishing needed coordination drawings
  - 3. Reporting: Contractor shall record meeting results and distribute copies to everyone in attendance, Architect, Owner, and to others affected by decisions or actions resulting from each meeting.

# 1.9 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request information at Project meeting, prepare and submit an RFI in the form specified included in Section 009000.
  - 1. RFIs shall originate with the Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
  - 3. If the Architect must prepare "responses to Contractor's Requests for Information" (RFI's) where such information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or Project correspondence or documentation the Owner will back-charge the Contractor for all costs associated with the additional Contract Administration Services provided by the Architect.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
  - 1. Project name.
  - 2. Date.
  - 3. Name of Contractor.
  - 4. Name of Architect.
  - 5. RFI number, numbered sequentially.
  - 6. Specification Section number and title and related paragraphs, as appropriate.
  - 7. Drawing number and detail references, as appropriate.
  - 8. Field dimensions and conditions, as appropriate.
  - 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  - 10. Contractor's signature.
  - 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: in the form specified included in Section 009000.
  - 1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with the same content as indicated above.
  - 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow (14) fourteen calendar days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
  - 1. The following RFIs will be returned without action:

- a. Requests for approval of submittals.
- b. Requests for approval of substitutions.
- c. Requests for coordination information already indicated in the Contract Documents.
- d. Requests for adjustments in the Contract Time or the Contract Sum.
- e. Requests for interpretation of Architect's actions on submittals.
- f. Incomplete RFIs or RFIs with numerous errors.
- 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
- 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Contract Modification Procedures.
  - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within (10) ten days of receipt of the RFI response.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within (7) seven days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number prepared using Microsoft Excel or approved equal. Submit log at least monthly, at each job meeting or when specifically requested by the Architect. Include the following:
  - 1. Project name.
  - 2. Name and address of Contractor.
  - 3. Name and address of Architect.
  - 4. RFI number including RFIs that were dropped and not submitted.
  - 5. RFI description.
  - 6. Date the RFI was submitted.
  - 7. Date Architect's response was received.
  - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

## 1.10 PROTECTION OF PERSONS AND PROPERTY

- A. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.
- B. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:
  - 1. All employees on the Work and all other persons who may be affected thereby.
  - 2. All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor of any of his Subcontractors of Sub-subcontractors.

- 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of the Work.
- C. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain as required by existing conditions and progress fo the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warning against hazards, promulgating safety regulations and notifying Owners and users of adjacent utilities.
- D. When the use of explosives or other hazardous materials or equipment is necessary for the execution of the Work, only after written approval from the Owner, the Contractor shall exercise the utmost care in compliance with State and Local regulations and shall carry on such activities under the supervision of properly qualified personnel.
- E. All damage or loss to any property referred to herein caused in whole or in part by the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them as be liable, shall be remedied by the Contractor.
- F. The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent, unless otherwise designated in writing by the Contractor to the Owner.
- G. The Contractor shall comply in all respects with the State Construction Safety Code and with applicable federal regulations, and shall see that all Subcontractors comply with the codes and regulations wherever and whenever they are applicable.
- H. The Contractor is specifically directed to comply with Section 7 of the Construction Safety Code which requires among other things, first aid kits to be available and the name of the nearest physician and ambulance service to be posted.
- I. The Contractor shall notify the Owner immediately if any accident or injury occurring on the project.
- J. Where electric or gas welding or cutting work is done above or within ten feet of combustible material, or above a space that may be occupied by persons, interposed shields of incombustible materials shall be used to protect against fire damage or injury due to sparks or hot metal.
- K. Tanks supplying gases for gas welding or cutting shall be placed at no greater distance from the Work than is necessary for safety, securely fastened and maintained in an upright position where practicable. Such tanks, when stored for use, should be removed from any combustible material and free from exposures to the ray of the sun or to high temperatures. Remove all tanks from the building at the end of each day.
- L. Suitable fire extinguisher equipment shall be maintained near all welding and cutting operations. When operations cease for the noon hour or at the end of the day, the surroundings adjacent to the welding and cutting operations should be thoroughly wet down.
- M. A workman equipped with suitable fire extinguishing equipment should be stationed near welding and cutting operations to see that sparks or hot metal do not lodge in floor cracks, or

pass through floor or wall openings or lodge in any combustible materials. The workmen shall be kept at the source or work offering special hazards for 30 minutes after the job is completed, to make sure that no smoldering fires have been started.

N. In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damaged, injury or loss.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's Construction Schedule.
  - 2. Submittals Schedule.
  - 3. Daily construction reports.
  - 4. Material location reports.
  - 5. Field condition reports.
  - 6. Special reports.

#### 1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

- 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
- 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- G. Major Area: A story of construction, a separate building, or a similar significant construction element.
- H. Milestone: A key or critical point in time for reference or measurement.

## 1.4 SUBMITTALS

- A. Preliminary Construction Schedule: Submit (3) three copies.
- B. Contractor's Construction Schedule: Submit (3) three copies of initial schedule, large enough to show entire schedule for entire construction period.
  - 1. Qualification Data: For scheduling manager.
- C. CPM Reports: Concurrent with CPM schedule, submit (3) three copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
  - 3. Total Float Report: List of all activities sorted in ascending order of total float.
- D. Daily Construction Reports: Submit (3) three copies with each monthly application for payment.
- E. Material Location Reports: Submit (3) three copies with each monthly application for payment.
- F. Submittals Schedule: Submit (3) three copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first submittal.
  - 2. Specification Section number and title.
  - 3. Submittal category (action or informational).
  - 4. Name of subcontractor.
  - 5. Description of the Work covered.
  - 6. Schedule dates for purchasing.
  - 7. Schedule dates for installation.
  - 8. Activity or event number.

- G. Scheduled date for Architect's and Owner final release or approval.
- H. Field Condition Reports: Submit (3) three copies at time of discovery of differing conditions.
- I. Special Reports: Submit (3) three copies weekly intervals.

# 1.5 QUALITY ASSURANCE

- A. Scheduling Manager Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's and Owner's request.
- B. Pre-scheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:
  - 1. Review software limitations and content and format for reports.
  - 2. Verify availability of qualified personnel needed to develop and update schedule.
  - 3. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
  - 4. Review delivery dates for Owner-furnished products.
  - 5. Review schedule for work of Owner's separate contracts.
  - 6. Review time required for review of submittals and re-submittals.
  - 7. Review requirements for tests and inspections by independent testing and inspecting agencies.
  - 8. Review time required for completion and startup procedures.
  - 9. Review and finalize list of construction activities to be included in schedule.
  - 10. Review submittal requirements and procedures.
  - 11. Review procedures for updating schedule.

## 1.6 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

## 2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, delivery and installation when establishing dates.
  - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  - 2. Initial Submittal Schedule: Submit concurrently with preliminary bar-chart schedule. Include submittals required during the first 60 sixty days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

## 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for Notice to Proceed to date of Substantial and Final Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than (10) ten calendar days, unless specifically allowed by Architect.
  - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than (60) sixty days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  - 3. Submittal Review Time: Include review and re-submittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  - 4. Startup and Testing Time: Include not less than (10) ten calendar days for startup and testing.
  - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion and for Township inspections and issuance of a TCO or CO.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
  - 1. Work Restrictions: Show the effect of the following types of items on the schedule including, but not limited to:

- a. Coordination with existing construction.
- b. Limitations of continued occupancies.
- c. Uninterruptible services.
- d. Partial occupancy before Substantial Completion.
- e. Use of premises restrictions.
- f. Seasonal variations.
- g. Environmental control.
- h. Local ordinances.
- 2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
  - a. Subcontract awards.
  - b. Submittals.
  - c. Purchases.
  - d. Mockups.
  - e. Fabrication.
  - f. Sample testing.
  - g. Deliveries.
  - h. Installation.
  - i. Tests and inspections.
  - j. Adjusting.
  - k. Curing.
  - 1. Startup and placement into final use and operation.
- D. Milestones: Include any milestones in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

# 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor shall, within (15) fifteen calendar days after issuance of a Notice to Proceed, submit a draft Contractor's Construction Schedule detailing logic, tasks and durations along with a detailed submittal schedule to the Architect.
- B. Schedule: The Contractor shall submit a comprehensive, fully developed, Contractor's Construction Schedule. The schedule shall be a comprehensive, fully developed, Contractor's Construction Schedule detailing logic, tasks and durations related to all work of the entire Project. The schedule shall not exceed time limits current under the Contract Documents for substantial completion of (each) phase and that of the Project.
- C. Preparation: Indicate each significant construction activity separately. Identify first workday of each week through to completion.

# 2.4 REPORTS

- A. Daily Construction Reports: Contractor shall prepare a daily construction report recording the following information concerning events at Project site: Failure to comply is cause for docking payment.
  - 1. List of subcontractors at Project site.
  - 2. Exact count and E.E.O.C. Classification of personnel at the site.
  - 3. List of separate contractors at Project site.
  - 4. Approximate count of personnel at Project site.
  - 5. Equipment at Project site.
  - 6. Material deliveries.
  - 7. High and low temperatures and general weather conditions.
  - 8. Accidents.
  - 9. Meetings and significant decisions.
  - 10. Unusual events (refer to special reports).
  - 11. Stoppages, delays, shortages, and losses.
  - 12. Meter readings and similar recordings.
  - 13. Emergency procedures.
  - 14. Orders and requests of authorities having jurisdiction.
  - 15. Change Orders received and implemented.
  - 16. Construction Change Directives received and implemented.
  - 17. Services connected and disconnected.
  - 18. Equipment or system tests and startups.
  - 19. Partial Completions and occupancies.
  - 20. Substantial Completions authorized.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for information in Section 009000 Project Forms, Form 009215 Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## 2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within weekly of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

# PART 3 - EXECUTION

## 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Meeting to Review and approve Contractor's Construction Schedule: (14) fourteen calendar days after receipt of the Contractor's Construction Schedule, the Owner, Architect, President of the Company or Corporation, of Contractor, shall meet to review, agree and sign off on the Contractor's Construction in the presence of the Owner, Architect and. Failure of Contractor to sign off on the Contractor's Construction Schedule shall result in the assessment of liquidated damages as outlined in Section 007300 Supplementary Conditions, article 8.4.1.
- B. Contractor's Construction Schedule Updating: At, at least, every 30 calendar days or as often as deemed necessary by the Architect, update schedule to reflect actual construction progress and activities and to recommend changes in the sequencing and scheduling. Issue schedule (1) one week before each regularly scheduled progress meeting. Upon 7 working days of the Architect's request, submit an updated schedule to the Architect.
  - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  - 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- C. The updated Contractors' Construction Schedule will be reviewed at each Job Meeting. Contractor is required to have a representative present at the Job Meeting with written authorization from the President of the Company or Corporation to review, agree upon and sign-off on any approved and agreed upon changes to the updated Contractors' Construction Schedule. Failure by Contractor to provide timely input in the time required to up[date the schedule shall result in a reduction in Contractor's Contract Amount of FIVE HUNDRED (\$500.00) DOLLARS per each occurrence as liquidated damages. In addition, payment to the Contractor for liquidated damages, for failure of the Project to be completed within the designated time due to the Contractor's failure to cooperate. Contractor shall be responsible for meeting the overall Project's phased completion date(s) and overall substantial completion date.
- D. Any acceleration of the Contractor's Construction Schedule shall be agreed upon by Contractor and approved by the Architect in writing.
- E. In the absence of a signed change order approving an extension of time, all Contractor Construction Schedule updates must show substantial completion date(s) consistent with the date(s) required in Section 011000 – Summary, paragraph 1.5.C of the Supplementary Conditions. Changes in logistics or duration shall not be made, except for good cause, and shall not result in an extension of the time for substantial completion. In the event certain aspects of the work fall behind the Contractor's Construction Schedule, the Contractor(s) responsible shall, in coordination, and consultation with all other Contractors, will develop a recovery plan to revise logistics, add manpower resources to reduce durations, expedite procurement or advance start of activities, to get the project back on a schedule that will assure completion in accordance with the substantial completion date.

- F. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  - 1. Post copies in Project meeting rooms and/or temporary field offices.
  - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

# SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
  - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
  - 3. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  - 4. Section 024119 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.

# 1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building for Architect's notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation. Architect shall select a minimum of (6) six views to be photographed and included with each Application for Payment.
- B. Digital Photographs:
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: Minimum resolution of 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Date photograph was taken.
    - b. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
c. Unique sequential numerical identifier.

#### 1.4 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner and Architect for unlimited reproduction of photographic documentation.

#### PART 2 - PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
  - 2. All photographs require a date and time stamp.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.
  - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Preconstruction Photographs: Before commencement of the installation of temporary facilities and demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
  - 1. Flag construction limits before taking construction photographs.
  - 2. Take a sufficient number of photographs to show existing conditions adjacent to property before starting the Work.
  - 3. Take a sufficient number of photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take photographs at regular intervals throughout construction to document regular progress and major milestone, including but not limited to:

- 1. Commencement of the Work, through completion of subgrade construction.
- 2. Above-grade structural framing.
- 3. Exterior building enclosure.
- 4. Interior Work, through date of Substantial Completion.
- 5. Roofing activities including existing conditions, tear-off and installation.
- E. Submit periodic construction photographs with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Architect-Directed Construction Photographs: From time to time, the Architect may instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Final Completion Construction Photographs: Take a minimum of twenty (20) color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.
- H. Additional Photographs: Architect may request photographs in addition to periodic photographs specified.
  - 1. In emergency situations, take additional photographs within 24 hours of request.
  - 2. Circumstances that could require additional photographs include, but are not limited to, the following:
    - a. Special events planned at Project site.
    - b. Immediate follow-up when on-site events result in construction damage or losses.
    - c. Photographs to be taken at fabrication locations away from Project site.
    - d. Substantial Completion of a major phase or component of the Work.
    - e. Extra record photographs at time of final acceptance.
    - f. Owner's request for special publicity photographs.

END OF SECTION 013233

#### SECTION 013300 - SUBMITTAL PROCEDURES

# PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 and Technical Specifications, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other Submittals.
- B. Administrative Submittals: Refer to other Division 01 Sections, other Specification Sections and Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
  - 1. Permits.
  - 2. Applications for Payment.
  - 3. Performance and Payment Bonds.
  - 4. Insurance Certificates.
  - 5. List of Subcontractors, suppliers, manufacturers, installers.
  - 6. Schedule of Values.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

### 1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings may be conditionally available from the Architect for Contractor's use in preparing Submittals by a jointly signed indemnity agreement.
  - 1. Contractor and each subcontractor will be required to sign an Indemnification and Hold Harmless Agreement in form provided by the Architect for the use of original electronic information created by the Architect.
  - 2. Electronic files will be provided only for the specific purpose of providing a reference document to the Contractor to be used for backgrounds for the completion by the Contractor of shop drawings only.

- 3. The Contractor shall agree the electronic information is for reference purposes only and that the Architect provided no warranty of any kind, written or implied, as to the completeness or accuracy of the electronic files.
- 4. The Contractor shall agree to hold all information contained in the electronic file confidential and protect it against use by others.
- 5. The Contractor shall be required to indemnify and hold harmless the Architect, its principals, employees, and its consultants in accordance with all terms and conditions listed in the Architect's Indeminification and Hold Harmless Agreement.
- B. Coordination: Coordinate preparation and processing of Submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other Submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of Submittals for related parts of the Work so processing will not be delayed because of need to review Submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a Submittal requiring coordination with other Submittals until related Submittals are received.
- C. Submittals Schedule: Submit (3) three copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first Submittal.
  - 2. Specification Section number and title.
  - 3. Submittal category (action or informational).
  - 4. Name of subcontractor.
  - 5. Description of the Work covered.
  - 6. Scheduled date for Architect's final release or approval
- D. Processing Time: Allow enough time for Submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of a fully prepared and complete Submittal. No extension of the Contract Time will be authorized because of failure to transmit Submittals enough in advance of the Work to permit processing, including re-submittals.
  - 1. Initial Review: Allow (14) fourteen calendar days for initial review of each Submittal. Allow additional time if coordination with subsequent Submittals is required. The Architect will advise Contractor when a Submittal being processed must be delayed for coordination.
  - 2. Intermediate Review: If intermediate Submittal is necessary, process it in same manner as initial submittal.
  - 3. Re-submittal Review: Allow (14) fourteen calendar days calendar for review of each resubmittal.
  - 4. Sequential Review: Where sequential review of Submittals by Architect's consultants, Owner, or other parties is indicated, allow (21) twenty one calendar days for initial review of each Submittal.
  - 5. No extension of contract time will be considered or authorized because of failure to transmit submittals far enough in advance of the work to permit processing.

- E. Identification: Place a permanent label or attach Form 009310 Submittal Cover Sheet, included in the Project Manual, with each Submittal for identification.
  - 1. Indicate name of firm or entity that prepared each Submittal on label or title block.
  - 2. Provide a space not less than 6 by 8 inches on label or beside title block to record Contractor's review and approval stamp, markings, date and Contractor's signature with and action taken by the Architect and its Consultants.
  - 3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Contractor.
    - d. Name of subcontractor.
    - e. Name of supplier.
    - f. Name of manufacturer.
    - g. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall include the Specification Section number followed by a decimal point and then a sequential article number (e.g., 06100.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
    - h. Number and title of appropriate Specification Section.
    - i. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on Submittals.
- G. Additional Copies: Unless additional copies are required for final Submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial Submittal may serve as final Submittal.
  - 1. Submit one copy of Submittal to concurrent reviewer in addition to specified number of copies to Architect.
  - 2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using transmittal form along with a submittal cover sheet, Form 009310 Submittal Cover Sheet, included in the Project Manual. The Architect will return submittals, without review, received from sources other than the Contractor.
  - 1. Transmittal Form: Provide on form, the following information:
    - a. Project name:
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Specification Section number and title.
    - f. Transmittal number, numbered consecutively.
    - g. Submittal and transmittal distribution record.

- h. Remarks.
- i. Signature of transmitter.
- 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous Submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related Submittal.
- I. Re-submittals: Make re-submittals in same form and number of copies as initial Submittal.
  - 1. Note date and content of previous Submittal.
  - 2. Note date and content of revision in label or title block. Clearly indicate extent of revision from previous submittal.
  - 3. Resubmit submittals until they are marked "approved" or "approved as noted".
- J. Distribution: Furnish copies of final submittals to manufacturers, Subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final Submittals with mark indicating "approved" or "approved as noted" from Architect's action stamp.

# PART 2 - PRODUCTS

# 2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a Schedule of Submittals, arranged in chronological order by dates required by construction schedule to the Architect and Owner. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  - 1. Coordinate Submittals Schedule with the Schedule of Values, and Contractor's Construction Schedule.
  - 2. Final Submittal: Submit concurrently with the first complete Submittal of Contractor's Construction Schedule.
- B. Failure by Contractor not correcting the scheduled update in the time required shall result in a reduction in the Contractor's Contract Amount of FIVE HUNDRED (\$500.00) per each occurrence as liquidated damages.

### 2.2 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single Submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for Submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

- 2. Mark each copy of each Submittal to show which products and options are applicable.
- 3. Include the following information, as applicable:
  - a. Manufacturer's written recommendations.
  - b. Manufacturer's written product specifications.
  - c. Manufacturer's written installation instructions.
  - d. Standard color charts.
  - e. Manufacturer's catalog cuts.
  - f. Wiring diagrams showing factory-installed wiring.
  - g. Printed performance curves.
  - h. Operational range diagrams.
  - i. Mill reports.
  - j. Standard product operation and maintenance manuals.
  - k. Compliance with specified referenced standards.
  - 1. Testing by recognized testing agency.
  - m. Application of testing agency labels and seals.
  - n. Notation of coordination requirements.
- 4. Submit Product Data concurrent with Samples.
- 5. Number of Copies: Submit (5) five copies of Product Data, unless otherwise indicated. Architect will return two copies. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shop work manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - 1. Notation of dimensions established by field measurement.
    - m. Relationship to adjoining construction clearly indicated.
    - n. Seal and signature of professional engineer licensed in the state Project is located if specified.
    - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring and who makes the connection.
  - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
  - 3. Number of Copies: Submit five opaque copies of each submittal.

- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
  - 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  - 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected
  - 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection as indicated in the specifications.
    - a. Number of Samples: Submit three sets of Samples. The Architect will retain one set and the Owner; the remainder will be returned.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  - 1. Type of product. Include unique identifier for each product.
  - 2. Number and name of room or space.
  - 3. Location within room or space.
  - 4. Number of Copies: Submit four copies of product schedule or list, unless otherwise indicated. Architect, will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Architect's action.
- G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
  - 4. Number of Copies: Submit (3) three copies of subcontractor list, unless otherwise indicated. Architect, will return (2) two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.

### 2.3 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
  - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  - 3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination".

- C. Contractor's Construction Schedule: Comply with requirements specified in Division 00 Section "Supplementary Conditions", Division 01 Section "Construction Progress Documentation".
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person in accordance with Division 01 Section "Project Management and Coordination". Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - 1. Preparation of substrates.
  - 2. Required substrate tolerances.
  - 3. Sequence of installation or erection.
  - 4. Required installation tolerances.
  - 5. Required adjustments.
  - 6. Recommendations for cleaning and protection.
- T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Statement whether conditions, products, and installation will affect warranty.
  - 7. Other required items indicated in individual Specification Sections.

- U. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage. Submit insurance in accordance with Division 01 Section 007300 – "Supplementary Conditions".
- V. Construction Photographs and Digital Images: Digital Images: Contractor to submit progress photographs showing a minimum of eight (8) different views of work under construction with each monthly application for payment. Photographs are to be taken from the locations, where established by the Architect. Photographs images on CD-ROM and shall bear the date of exposure, name of the Project, Contractor, and Architect. Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of at least 5.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.
- W. Material Safety Data Sheets (MSDSs): Submit information directly to Owner.

### 2.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required Submittals, submit (3) three copies of a statement, signed and sealed by the responsible design professional licensed in the state the Project is located, for each product and system specifically assigned to Contractor to be designed or certified by a licensed professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.
  - 2. Submittal will be reviewed by the Architect and Engineer. Once the Submittal is approved, the Contractor shall receive a letter from the Architect stating that the Submittal meets the requirements of the Project. The Contractor shall then be responsible for submitting two signed and sealed copies of the Submittal, with the Architect's Letter, to the local building department, for final review and approval, prior to proceeding with the Work. The Contractor shall provide transmittal copies of this submission to the Owner and the Architect for record purposes.

# PART 3 - EXECUTION

# 3.1 CONTRACTOR'S REVIEW

A. Review each Submittal and check for coordination with other work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp, sign and date before submitting to Architect.

B. Approval Stamp: Stamp each Submittal with a uniform, approval stamp. Include Project name and location, Submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that Submittal has been reviewed, checked, and approved for compliance with the Contract Documents along with the Contractor's original signature.

# 3.2 ARCHITECT'S ACTION

- A. General: Architect will not review Submittals that do not bear Contractor's approval stamp, date and signature, and will return them without action.
- B. Action Submittals: Architect will review each Submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each Submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational Submittals: Architect will review each Submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each Submittal to appropriate party.
- D. Partial Submittals are not acceptable, will be considered non-responsive, and will be returned without review. Submittals not required by the Contract Documents may not be reviewed and may be discarded.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

### END OF SECTION 013300

# SECTION 014000 - QUALITY REQUIREMENTS

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other qualityassurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
  - 4. Specific test and inspection requirements are not specified in this Section.

# 1.3 DEFINITIONS

- A. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
  - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
  - 2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

- B. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- C. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- D. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- E. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- G. Certified Special Inspectors: A individual certified in accordance with the administrative provisions of the New Jersey Uniform Construction Code, article 5:23-5.19G Special Inspector Requirements and having successfully completed article 5:23-5.23B Examination Requirements for Special Inspectors, and having received a certificate certifying the individual is a Certified Special Inspector to conduct, supervise and evaluate test or inspections for the following in:
  - 1. Structural Steel and welding special inspector: Structural Steel and welding special inspectors are authorized to carry out field inspections pursuant to section 1704.3 of the IBC International Building, latest adopted version. (New Jersey edition).
  - 2. Concrete special inspector: Concrete special inspectors are authorized to carry out field inspections pursuant to section 1704.4 of the IBC International Building, latest adopted version. (New Jersey edition).
  - 3. Structural Masonry special inspector: Structural Masonry special inspectors are authorized to carry out field inspections pursuant to section 1704.5 of the IBC International Building, latest adopted version. (New Jersey edition).
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

## 1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply

with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.

# 1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within ten (10) days of Notice to Proceed, and not less than five (5) days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

- 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
- 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
- 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

# 1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of technical representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

- 6. Statement whether conditions, products, and installation will affect warranty.
- 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement that equipment complies with requirements.
  - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 4. Statement whether conditions, products, and installation will affect warranty.
  - 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

# 1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified and licensed to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Special Inspector Qualifications: An individual certified in accordance with the administrative provisions of the New Jersey Uniform Construction Code, article 5:23-5.19G Special Inspector Requirements and having successfully completed article 5:23-5.23B Examination Requirements for Special Inspectors, and having received a certificate certifying the individual is a Certified Special Inspector.
- I. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- K. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- L. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
  - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
  - 2. Notify Architect seven (7) days in advance of dates and times when mockups will be constructed.
  - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
  - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
  - 5. Obtain Architect's and Owner's approval of mockups before starting work, fabrication, or construction.
    - a. Allow ten (10) days for initial review and each re-review of each mockup.
  - 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  - 7. Demolish and remove mockups when directed, unless otherwise indicated.

# 1.9 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
  - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
  - 3. Notify testing agencies at least (48) hours in advance of time when Work that requires testing or inspecting will be performed.
  - 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  - 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  - 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- C. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar qualitycontrol service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Delivery of samples to testing agencies.
  - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

# 1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
  - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.

- 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
- 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
- 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
- 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- 6. Retesting and re-inspecting corrected work.

# PART 2 - PRODUCTS (Not Used)

# PART 3 - EXECUTION

# 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Architect.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Sections 017300 "Execution." And 017329 "Cutting and Patching".
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.
- D. Contractor shall be entirely and solely responsible for the proper care and protection of all materials furnished, and/or work performed under this Contract. He shall take all precautions, which may be necessary to protect such materials or work against damage in any form or theft, until the acceptance of the finished work by Owner.

E. Such precautions shall not relieve said Contractor from making good and replacing any and all work or materials damaged for any cause.

END OF SECTION 014000

#### SECTION 014200 - REFERENCES

# PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, in Addenda, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued and/or adopted by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "In Kind": Identical to the existing item, with all the same features, finishes, options, etc.
- H. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- I. "Products": new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials and components required for reuse when indicated as such.
- J. "Provide": Furnish and install, complete and ready for the intended use.
- K. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

- L. "Testing Agency": A testing agency 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.
- M. Where the phrases "submit to the Architect" or "report to the Architect" or "consult with the Architect" or phrases of like effect are used, it is intended that such reports or submissions to, and consultations with the Architect shall be made.
- N. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, Subcontractor, or Contractor of lower tier, to perform 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.
  - 1. The term "experienced", when used with the term installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.

### 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.
- ADAAG Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA)

## 1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The)
ACI	ACI International (American Concrete Institute)
AGC	Associated General Contractors of America (The)
AIA	American Institute of Architects (The)
ANSI	American National Standards Institute
ASTM	ASTM International (American Society for Testing and Materials International)
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Construction Specifications Institute (The)
EIA	Electronic Industries Alliance
EJCDC	Engineers Joint Contract Documents Committee
FMG	FM Global (Formerly: FM - Factory Mutual System)
FMRC	Factory Mutual Research (Now FMG)
IAS	International Approval Services (Now CSA International)
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ITS	Intertek
MFMA	Metal Framing Manufacturers Association
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
NACE	NACE International (National Association of Corrosion Engineers International)
NECA	National Electrical Contractors Association

- NEMA National Electrical Manufacturers Association
- NETA InterNational Electrical Testing Association
- NFPA NFPA (National Fire Protection Association)
- NRMCA National Ready Mixed Concrete Association
- NSSGA National Stone, Sand & Gravel Association
- OPL Omega Point Laboratories, Inc. (Acquired by ITS Intertek)
- SWRI Sealant, Waterproofing, & Restoration Institute
- UL Underwriters Laboratories Inc.
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.
- ICBO International Conference of Building Officials (See ICC)
- ICBO ES ICBO Evaluation Service, Inc. (See ICC-ES)
- ICC International Code Council
- PART 2 PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

# SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Specific administrative and procedural minimum actions are specified in this Section, as extensions of provisions in General Conditions and other Contract Documents. These requirements have been included for special purposes as indicated. Nothing in this Section is intended to limit types and amounts of temporary work required, and no omission from this Section will be recognized as an indication by Architect or its Engineers that such temporary activity is not required for successful completion of the Work and compliance with requirements of Contract Documents. Provisions of this Section are applicable to, but not by way of limitation, utility services, construction facilities, security/protection provisions, and support facilities, etc.
- C. The types of temporary support facilities required and to be provided includes, but not by way of limitation, security, optional field offices, optional storage sheds, electrical power distribution, lighting, enclosure of work, hoisting facilities, ladders, scaffolds, first aid facilities, private telephones, cleanup facilities, dumpsters and waste disposal services, and similar miscellaneous general services, all as may be reasonably required for proficient performance of the work and accommodation of personnel at the site including Owner's construction forces, Architect's and Engineers' personnel. Include moving, relocation and reinstallation as may be required to accommodate construction progress. Discontinue and remove temporary support facilities, and make incidental similar use of permanent work of the project, only when and in manner authorized by the Architect; and, if not otherwise indicated, immediately before time of Substantial Completion. Locate temporary support facilities for convenience of users, and for minimum interference with construction activities.

### 1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

- B. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

#### 1.4 QUALITY ASSURANCE

- A. General: In addition to compliance with governing regulations and rules/recommendations of franchised utility companies, comply with specific requirements indicated and with applicable local industry standards for construction work (published recommendations by local consensus "building councils").
- B. ANSI Standards: Comply with applicable provisions of ANSI A10-Series standards on construction safety.
- C. NFPA Code: Comply with NFPA Code 241 "Safeguarding Construction, Alteration and Demolition Operations".
- D. Environmental Impact Statement: Comply with provisions of Owner's committed EIS, for development and operation of temporary facilities and construction activities.
- E. Conservation: In compliance with Owner's policy on energy/materials conservation, install and operate temporary facilities and perform construction activities in manner which reasonably will be conservative and avoid waste of energy and materials including water.
- F. ADA and ICC/ANSI Compliance: Construction for this Project must comply with the current adopted version of the Americans with Disability Act (ADA) and the ICC/ANSI A117.1.
- G. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with current adopted version of the NEC.
- H. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- I. Environmental Protection Procedures: provide facilities, establish procedures, and conduct construction activities in a manner which will ensure compliance with Owner's environmental impact statement and other regulations controlling construction activities at the Project Site. Designate one person, the Construction Superintendent or other, to enforce strict discipline on activities related to generation of wastes, pollution of air, water, soil, general noise, and similar harmful deleterious effects which might violate regulations of reasonably irritate persons at or in vicinity of the Project Site.

#### 1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its

use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

- B. Establish and initiate the use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced the need.
- C. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary and protective of persons and property, and free of deleterious effects.
- D. Installers shall verify clearances of all paths at job site leading to final installation locations, and break down the final product components into component assemblies sized accordingly to negotiate all corners, turns, etc., in the path to its final installation location.
- E. Contractors will provide their own extension cords, hoses, etc. as required for their work.

# PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Materials for Temporary Work: Lumber, plywood, gypsum board, insulation, paints, etc. required for temporary work shall comply with corresponding specification sections and applicable codes and regulations of in effect at the Project location by authorities having jurisdiction.

### 2.2 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Contractor shall provide its own storage trailer equipped to accommodate materials and equipment for construction operations. As an alternate, the Owner may be able to make accommodations within the building and project site for storage.
  - 1. Store combustible materials apart from building.

# 2.3 FIRE PROTECTION PROVISIONS

A. Fire Extinguishers: Provide Fire protection equipment during the entire construction period as required by the authority having jurisdiction of types, sizes, numbers and locations as would be reasonably effective in extinguishing fires during early stages, by personnel at Project site. Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures. Post warning and quick instructions at each extinguisher location, and instruct personnel at Project site, at time of their first arrival, on proper use of extinguishers and other available facilities at Project site.

### 2.4 ACCESS PROVSIONS

- A. Provide ramps, stairs, ladders and similar temporary access elements as reasonably required to perform the Work and facilitate its inspection during installation. Comply with reasonable requests of governing authorities performing inspections. When permanent stairs are available for access during construction, cover finished surfaces with sufficient protection to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Use of Owner's elevators is not allowed.

# PART 3 - EXECUTION

# 3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
- B. Sanitary Facilities: Use of owner's toilet facilities is not allowed. Contractor shall provide, at their own expense, temporary self-contained toilet units with provisions to remove effluent lawfully, wash facilities, and drinking water with cups for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- C. TEMPORARY WATER SERVICE:
  - 1. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

### D. TEMPORARY ELECTRIC SERVICE AND LIGHTING

1. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

- 2. All necessary labor and materials required for the installation and maintenance of subsequent removal of the temporary distribution system including all fuses and lamps shall be provided by the Contractor.
- 3. Do not allow, provide or make available for use by any subcontractor, supplier, installer, employee any apparatus, equipment, or cord sets not meeting OSHA requirements.
- 4. Contractor shall be responsible for obtaining all temporary wiring permits required to facilitate the work; prior to, as well as during construction and adjust the temporary wiring system as needed to accommodate the construction of the Work.
- 5. Contractor shall maintain temporary light and power until it is no longer required as determined by the Contractor. Contractor shall keep the system in good repair and shall promptly replace burned out, defective, missing or broken lamps. Permanent fixtures mays be used for temporary lighting when used for temporary lighting purposes in permanent fixtures when the Contractor replaces lamps with new, unused lamps immediately prior to the final acceptance of the permanent system.
- 6. Contractor shall alter and relocate temporary wiring as required when such interfaces with construction as determined by the Contractor. Contractor shall disconnect and completely remove the temporary electrical system or portions thereof in a neat, workman-like manner without cost Owner.
- 7. Contractor shall not disrupt electrical power whether temporary or permanent during normal working hours. Any switching, splicing, or other work performed by the Contractor, necessitating an interruption of power shall be performed during times when the buildings are not in use by the Owner or their users.
- 8. Contractor shall provide for temporary site security lighting as required.
- E. Telephone Service: Contractor shall use their own cellular telephone service for use by all construction personnel.

# 3.3 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Maintain access for emergency and fire-fighting equipment and access to fire hydrants.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
  - 1. The Contractor shall provide waste-collection containers for use by all construction personnel to deposit all rubbish, debris, boxes, crates, etc. The General Contractor shall remove and properly dispose of the contents of the waste-collection containers as necessary to keep the progress of the job moving.
  - 2. The Contractor shall maintain the construction areas as clean as the progress of the work will permit.
    - a. The Contractor will clean up all its waste materials, rubbish and debris on a daily basis.
    - b. The Contractor will place its waste materials, rubbish and debris in the wastecollection containers on a daily basis.

- c. The Contractor will be responsible to keep the construction area, etc. clean and free of debris, materials, etc. at all times during the entire period of construction. If the Contractor does not adhere to this requirement, the Owner will engage a cleaning contractor to thoroughly clean the area and will back charge the General Contractor for all costs involved.
- 3. Upon Substantial Completion, the Contractor shall completely clean the entire Project. The cleaning shall include, but is not limited to, cleaning of all surfaces, finishes, equipment, fixtures, etc... The building and grounds and surrounding areas shall be left in a condition acceptable to the Owner.

### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Enclosure Fence: Before construction operations begin, furnish and install a temporary enclosure fence where dumpsters, trailers, etc... will be located in a manner that will prevent people and animals from easily entering the construction site except by pedestrian and equipment entrance gates.
- C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Site Enclosure Fence: at the earliest reasonable date to enclose the project site or work area, or portion thereof determined by the Contractor, with approval by the Owner, to be sufficient to contain the entire construction activity, provide a six foot high chain-link steel fence. Provide gates for both personnel, trucks, and other construction related equipment and deliveries, with signage, and locks for strict security control.
- F. Provide security and protection in coordination with activities and in a manner to achieve 24-hour, 7-day-per-week effectiveness.
- G. Temporary Enclosures: Contractor shall provide temporary enclosures for protection of all new and existing construction, exterior work effected by scope of work, in progress and completed, from exposure, foul weather and unsatisfactory ambient conditions, other construction operations, and similar activities.
  - 1. Use fire-retardant treated lumber and plywood. Provide tarpaulins and UL label and flame spread of 15 or less; provide translucent type (nylon reinforced polyethylene) where daylighting of enclosed space would be beneficial for workmanship, and reduce use of temporary lighting.

- H. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise. Locations to be coordinated with the College Contractor to assume the need to construct 500 sq ft of partition / barrier at various locations at various times throughout phased construction.
  - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
  - 2. Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
  - 3. Insulate partitions to provide noise protection to occupied areas.
  - 4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
  - 5. Protect air-handling equipment.
  - 6. Construct temporary dustproof closures to open ends of ductwork and equipment until such time as systems are ready for use or till substantial completion.
  - 7. Weather strip openings.
  - 8. Provide walk-off mats at each entrance through temporary partition
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Prohibit smoking in hazardous fire-exposure and construction areas.
  - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  - 3. Fire Extinguishers: Provide portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

### 3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of the Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Closeout Procedures.

END OF SECTION 015000

### SECTION 016000 - PRODUCT REQUIREMENTS

# PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

#### 1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, purchased for Project. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design" "or approved equal", including make or model number or other designation, to establish the significant qualities related to type, function, dimension, inservice performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

### 1.4 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
- 1. Substitution Request Form: Use Form "Submittal Matrix for Substitution Evaluation As Approved Equal" included in Section 009000 Project Forms. An example copy is included at the end of this Section.
- 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
  - a. Statement indicating why specified material or product is not being provided.
  - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
  - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - h. Research/evaluation reports evidencing compliance with building code(s) in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
  - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
  - 1. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within (14) fourteen days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within (21) twenty one days of receipt of request, or (14) fourteen days of receipt of additional information or documentation, whichever is later.
  - a. Form of Acceptance: Approval Stamp.
  - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

- 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within (14) fourteen days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within (21) twenty one days of receipt of request, or (14) fourteen days of receipt of additional information or documentation, whichever is later.
  - a. Form of Approval: Approval Stamp.
  - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
  - 1. Contractor is responsible for providing products and construction methods compatible with products and construction methods of Owner's own forces.
  - 2. If a dispute arises over concurrently selectable but incompatible products, Architect will determine which products shall be used.
- B. Source Limitations: to the fullest extent possible, provide products of the same kind from a single source

### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.

- 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and in accordance with manufacturer's written instructions.
- 4. Store cementitious products and materials on elevated platforms.
- 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- 6. Comply with product manufacturer's written instructions for all products, for temperature, humidity, ventilation, and weather-protection requirements for storage.
- 7. Protect stored products from damage and liquids from freezing.
- 8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

### 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  - 2. Specified Form: When specified forms of warranty are included with the Specifications, prepare a written document using appropriate form properly executed.
  - 3. Refer to Specification Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures" and as required by specific Sections in the Project Manual.

#### PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

- 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- 4. Where products are accompanied by the term "as selected," Architect will make selection.
- 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
- 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- 7. Or Approved Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 Article "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
  - 1. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  - 2. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  - 3. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
  - 4. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
  - 5. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
    - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
  - 6. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.

b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within fifteen (15) days after (the Notice to Proceed). Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - 2. Requested substitution does not require extensive revisions to the Contract Documents.
  - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 4. Substitution request is fully documented and properly submitted.
  - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - 7. Requested substitution is compatible with other portions of the Work.
  - 8. Requested substitution has been coordinated with other portions of the Work.
  - 9. Requested substitution provides specified warranty.
  - 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
  - 11. The substitution shall be accompanied by a written statement signed by all prime contractors effected that the substitution is acceptable, consistent and compatible with their portion of the work and there is no consequential additional cost associated with the substitution.

## 2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

- 3. Evidence that proposed product provides specified warranty.
- 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
- 5. Samples, if requested.

## PART 3 - EXECUTION

3.1 Example Form 009315 - "Submittal Matrix for Substitution Evaluation as Approved Equal" is attached at the end of this Section.



## SUBMITTAL MATRIX FOR EVALUATION OF SUBSTITUTION AS APPROVED EQUALS

# Sample

Specifications-Overhead Door	Product Specified	Proposed Equal
Manufacturer Raynor-Tru-Core	Raynor Tru-Core	
Door Sections	3	
Gauge	26 Gauge	
Insulation	2-7/8 expanded polystyrene	
End Stiles	14 gauge	
<i>U-value</i>	.12	
Finish	2 Coats baked	
Weather-stripping	EPDM	
Air infiltration	.81 CFM @ 25 M.P.H	
Assembly U-Value	.12	
Section Joints	No Air infiltration/ASTM	
Tracks	3" Galvanized	
Angle size	<i>3-1/2 x 6" x1/8</i>	
Hardware	10-5/16 diameter	
Lock (exterior)	Tumbler cylinder night latch	
Lock (interior)	Dead Bolt	
Framing	By other	
Glazing	24" x 8" x 5/8 insulated	
Operator	RGT-2h 1/2 H.P. 115	
Trolley rail	2-1/2 x 2" x 3/16"	
Limit Switch	Positive Chain Drive	

The 1st column are items derived from the Specification specific section (doors, windows, etc.). The 2nd column consists of the values for those items for the product specified. The 3rd column is to be entered with the product "equal" data verified with the Manufacturer's literature. See Section 090000 – PROJECT FORMS for a blank copy to be used when submitting substitutions.

# \*This comparison must have manufacturer's literature for verification attached!

## SECTION 016600 – STORAGE AND HANDLING REQUIREMENTS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 and Technical Specifications, apply to this Section.

### 1.2 REQUIREMENTS INCLUDED

- A. Storage, General.
- B. Enclosed Storage.
- C. Exterior Storage.
- D. Maintenance Storage.
- E. Maintenance of Equipment Storage.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

### 3.1 STORAGE, GENERAL

- A. Store products, immediately on delivery, in accordance with manufacturer's written instructions, with seals and labels intact and legible. Protect until installed.
- B. Arrange storage in a manner to provide access for maintenance of stored items and for inspection.

### 3.2 ENCLOSED STORAGE

- A. Store products, subject to damage by the elements, in substantial weather tight enclosures.
- B. Maintain temperature and humidity within ranges stated in manufacturer's written instructions
- C. Provide humidity control and ventilation for sensitive products as required by manufacturer's written instructions.
- D. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

#### 3.3 EXTERIOR STORAGE

- A. Provide substantial platforms, blocking, or skids, to support fabricated products above ground; slope to provide drainage. Protect products from soiling and staining.
- B. For products subject to discoloration or deterioration from exposure to elements, cover with impervious sheet material. Provide ventilation to avoid condensation.
- C. Store granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, and protected from adverse conditions to prevent mixing with foreign matter.
- D. Provide surface drainage to prevent erosion and ponding of water.
- E. Prevent mixing of refuse or chemically injurious materials or liquids.

#### 3.4 MAINTENANCE OF STORAGE

- A. Periodically inspect stored products on a scheduled basis.
- B. Verify that storage facilities comply with manufacturer's product storage requirements.
- C. Verify that manufacturer's required environmental conditions are maintained continually.
- D. Verify that surfaces of products exposed to the elements are not adversely affected; that any weathering of finishes is acceptable to the manufacturers and under requirements of Contract Documents.

## 3.5 MAINTENANCE OF EQUIPMENT STORAGE

- A. For mechanical and electrical equipment in long-term storage, provide manufacturer's service package.
- B. Service equipment on a regularly scheduled basis, maintaining a log of services; submit as a Record Document.

### SECTION 017300 - EXECUTION

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. General installation of products.
  - 3. Starting and adjusting.
  - 4. Coordination of Owner installed products.
  - 5. Progress cleaning.
  - 6. Protection of installed construction.
  - 7. Correction of the Work.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for limits on use of Project site.
  - 2. Section 013300 "Submittal Procedures" for submitting surveys.
  - 3. Section 017329 "Cutting and Patching".
  - 4. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
  - 5. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
  - 6. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

### PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Existing Conditions for Renovation, Alteration and Addition Work: 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.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated are generally known as existing, are not guaranteed and are provided for reference only. Before beginning site work, investigate and verify the existence, location, and depth 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 and telecommunication services.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: 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.

## 3.2 PREPARATION

A. Existing Utility Information: Furnish information to 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. 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.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. 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. Submit requests on "Request for Information Form.
- E. Should the Contractor encounter elevational, dimensional, subsurface and/or latent conditions at the Site materially differing from those shown on the Plans or indicated in the Specifications, he shall immediately give written notice to the Architect of such conditions before they are disturbed. The Architect will thereupon promptly investigate the conditions and if the Architect finds that they materially differ from those shown on the Plans or indicated in the Specification, he will at once make such changes in the Plans/Specifications as he may find necessary, and any increase or decrease of cost resulting from such changes will be adjusted in the manner provided in the Contract Documents.

## 3.3 CONSTRUCTION LAYOUT

- A. Building Lines and Levels: Locate and lay out control lines and levels for foundations and others required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels.
- B. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  - 4. Maintain minimum headroom clearance of (8 feet (2.4 m) eight feet in spaces without a suspended ceiling.
- 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: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Approved Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. 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.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.5 NEW WORK AT EXISTING LOCATIONS

- A. When a new wall, ceiling, roof or floor assembly is indicated where an existing wall, ceiling, roof or floor assembly exists, the existing shall be removed with associated utilities removed and capped behind the surface of the remaining substrate unless otherwise noted at no additional cost to the Owner.
- B. When new finishes are scheduled, indicated or required over existing substrates, the Contractor shall completely remove existing finish materials, such as, but not necessarily limited to, veneers, coatings, films, oils, sealers, adhesives and other residual materials which are not acceptable substrates for new finishes per new finish manufacturer's written specifications and best industry standards whether specifically indicated or not. Defective substrates which are no longer uniform, dimensionally stable, structurally sound, or otherwise unacceptable for the installation of new finishes, shall be removed and replaced with new material compatible with existing and suitable for the new finish in accordance with material manufacturer's written literature and recognized industry standards. In all cases, consult material manufacturer's literature for new finishes to be installed prior to starting the work.

### 3.6 OWNER INTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

#### 3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

#### 3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

### 3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.
- C. In the event of temporary suspension of Work or during inclement weather, each Prime Contractor will cause his Subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Architect, any work or materials shall have been damaged or injured by reason of failure on the part of a Contractor or any of his Subcontractors to so protect his work, such materials shall be removed and replace at the expense of the responsible Contractor.

### 3.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

#### EXECUTION

- 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

### SECTION 017329 - CUTTING AND PATCHING

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

#### 1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Unless directed otherwise, do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or resulting in increased maintenance or decreased operational life or safety. Operating elements include, but are not limited to, the following:
  - 1. Exterior wall construction.
  - 2. Primary operational systems and equipment.
  - 3. Air or smoke barriers.
  - 4. Fire-suppression systems.
  - 5. Mechanical systems piping and ducts.
  - 6. Control systems.
  - 7. Communication systems.
  - 8. Conveying systems.
  - 9. Electrical wiring systems.
- C. Miscellaneous Elements: Unless directed otherwise, do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or resulting in increased maintenance or decreased operational life or safety. Miscellaneous elements include, but are not limited to, the following:

- 1. Water, moisture, or vapor barriers.
- 2. Membranes and flashings.
- 3. Equipment supports.
- 4. Piping, ductwork, vessels, and equipment.
- 5. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace all construction that has been cut and patched in a visually unsatisfactory manner.
- E. Submittals: Approval of procedures for cutting and patching is required before proceeding. Submit a proposal describing procedures. Include the following information, as applicable, in the proposal:
  - 1. List products to be used and firms or entities that will perform Work as well as a detailed description of the Work itself.
  - 2. Indicate dates when cutting and patching will be performed and the anticipated duration of the Work.
  - 3. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
  - 4. If cutting and patching involves additions and modifications to structural elements, submit details and engineering calculations to show how these additions will integrated with the original structure. In all cases indicate any changes in the elevation of the ceiling, or the effect on mechanical and electrical distribution systems.
  - 5. Prior to the cutting and patching of interior architectural elements, building components, or modification of exposed finishes, review the repair and restoration procedures with the Architect prior to the start of the Work.
  - 6. Approval by the Architect to proceed with cutting and patching does not waive the Architect's or Owner's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory or otherwise unacceptable.

## PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed, prior to the start of the Work.
- B. Before proceeding, meet at the site with the Owner and the Architect and other representatives as may be required prior to cutting and patching. Review areas of potential interference and conflicts. Coordinate procedures and resolve potential conflicts before proceeding.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- B. Once new finishes are installed, contractor shall adequately protect new work from damage (floor protection boards, sheet protection for wall and ceilings, etc...). Contractor shall be fully responsible to repair or replace damaged work in place prior to Owner acceptance.
- C. Contractor shall suitably protect adjacent existing construction to remain; including doors and entrances, corridor finishes and other areas of the building used for access to the project site. Contractor shall be fully responsible to repair or replace damaged existing finishes, surfaces and equipment prior to Owner acceptance. Extent of repair or replacement shall extend as necessary so as to leave no evidence of patching.
- D. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Concealed utilities, structural elements and hazards: Prior to cutting and patching work, survey and locate utilities, structural elements and hazards using locator/detection equipment. Promptly submit a written report to the Architect describing the nature and extent of any conflicts with the intended function or design of the work. Do not proceed until conflicts are resolved.
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to the fullest extent possible to occupied areas.

### 3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

- 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  - 4. Ceilings: Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

- D. Certain finishes must be replaced. Repair is not acceptable. Damaged surfaces, exposed to view which cannot be repaired without visible evidence of such repair, chipped or broken glass, scratched transparent finishes, scratched reflective surfaces, ceramic tile, millwork, trim. Where special order finish materials are involved, preorder sufficient quantities necessary for repair prior to the start of the Work.
- E. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

## 3.4 CUTTING AND PATCHING - GENERAL

A. The Contractor shall perform all cutting, drilling, removal, cleaning, servicing, repairing, patching, re-hanging, restoration, etc. that may be required in connection with its work. The Contractor shall be responsible for maintaining all existing warranties.

#### SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 and Technical Specifications, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Salvaging, recycling, disposing of nonhazardous demolition materials.

#### 1.3 DEFINITIONS

- A. Owner reserves first right of refusal for removal and salvage items. Items indicated for removal and salvage remain the Owner's property. Remove, clean, and pack items to protect against damage and deliver to Owner's designated storage area with labels to identify contents of containers.
- B. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- C. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- D. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- E. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### 1.4 PERFORMANCE

A. Recycle Goals: Owner's goal is to recycle as much nonhazardous demolition and construction waste as reasonably possible.

## 1.5 SUBMITTALS

- A. Waste Management Plan: Submit (3) three copies of plan within (30) thirty days of date established for the Notice to Proceed.
- B. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

## 1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 IMPLEMENTATION

- A. General: Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management during the entire duration of the Contract.
  - 1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Provide separation, handling, transportation, recycling, salvage, and landfilling for all demolition and waste materials.
- C. Do not handle, separate, store, salvage, or recycle hazardous materials. Contact Architect if hazardous materials are encountered.

### 3.2 SALVAGING DEMOLITION WASTE

- A. Owner reserves first right of refusal for removal of salvage items. Items indicated to be removed, and salvaged items, remain the Owner's property. Remove, clean and pack items to protect against damage and deliver to Owner's designated storage area with labels to identify contents of containers. Demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.
- B. Salvaged Items for Reuse in the Work:
  - 1. Clean salvaged items.

- 2. Pack or crate items after cleaning. Identify contents of containers.
- 3. Store items in a secure area until installation.
- 4. Protect items from damage during transport and storage.
- Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- C. Salvaged Items for Sale and Donation: Not permitted on Project site.
- D. Salvaged Items for Owner's Use:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area on-site where designated by Owner.
- E. Protect items from damage during transport and storage.

#### 3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE

- A. Metals: Separate metals by type.
  - 1. Structural Steel: Stack members according to size, type of member, and length.
  - 2. Remove and dispose of metal studs.
  - 3. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- B. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- C. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
  - 1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
- D. Wood Materials:
  - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
  - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood
- E. Carpet (and Pad): Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
  - 1. Store clean, dry carpet (and pad) in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- F. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- G. Plumbing Fixtures: Separate by type and size.

- H. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- I. Lighting Fixtures: Separate lamps by type and protect from breakage.
- J. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.
- K. Conduit: Reduce conduit to straight lengths and store by type and size.
- L. Packaging:
  - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
  - 2. Polystyrene Packaging: Separate and bag materials.
  - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
  - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- 3.4 DISPOSAL OF WASTE
  - A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
    - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
    - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - B. Burning: Do not burn waste materials.

### SECTION 017700 - CLOSEOUT PROCEDURES

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Warranties.
  - 3. Final cleaning.

#### 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following for each project.
  - 1. In the Application for Payment that coincides with, or first follows, the date of Substantial Completion is paid, show 100% completion for the portion of the Work claimed as Substantially Complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
  - 2. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete (see "Ready for Closeout" Form).
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Complete startup testing of systems, and instruction of the Owner's operating and maintenance personnel.
  - 8. Submit test/adjust/balance records.
  - 9. Terminate and remove temporary facilities from Project site.
  - 10. Complete final cleaning requirements, including touchup painting.
  - 11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
  - 12. Advise Owner of pending insurance change over requirements.

- 13. Make final change over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change over in security provisions.
- B. Inspection: Submit a written request for inspection for Substantial Completion in accordance with AIA Document A201, Article 9.8 Substantial Completion and as follows:
  - 1. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. After inspection the Architect will prepare the Certificate of Substantial Completion or will notify Contractor of items, either on Contractor's list or additional items identified by Architect that must be completed or corrected before the certificate will be issued.
  - 2. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 3. Additional Re-inspections: If more than two (2) re-inspections are required to be made by the Architect, the Owner shall deduct \$500.00 for half a day or \$1,000.00 for a full day from the Contract Value for each re-inspection required.
  - 4. Results of completed inspection will form the basis of requirements for Final Completion.
  - 5. Submit completed "Ready for Closeout" Form in Section 009000.

### 1.4 FINAL COMPLETION/READY FOR CLOSEOUT

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
  - 1. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  - 2. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  - 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  - 4. Consent of Surety for Final Payment.
  - 5. Submit the final payment request with releases and supporting documentation not previously submitted and accepted.
  - 6. Submit an updated final statement, accounting for final changes to the Contract Sum.
  - 7. Submit a final liquidated damages settlement statement.
- B. Inspection: Submit a written request for final inspection/closeout on the form provided in Section 009000 Project Forms, Form 009500 Ready for Closeout. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 2. Additional Re-inspections: If more than two (2) re-inspections are required to be made by the Architect, the Owner shall deduct \$500.00 for half a day or \$1,000.00 for a full day from the Contract Value for each re-inspection required.

## 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit with Request for Substantial Completion Inspection, three copies of punchlist. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.

## 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties for designated portions of the Work as required by specific Sections of the Project Manual.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do no relieve the Contractor of the Warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.
- E. Warranty Requirements
  - 1. Related Damages and Losses: when correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted work.

- 2. Reinstatement of Warranty: when Work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- 3. Replacement Cost: upon determination the Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with the requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from its use of the Work through a portion of its anticipated service life.
- 4. Owner's Recourse: expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights or remedies.
- F. Warranty Submittals
  - 1. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
  - 2. When a special warranty is required to be executed by the Contractor, or the Contract and a Subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. All premises must be broom clean.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

- 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
  - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  - b. Sweep effected paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
  - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - d. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - e. Sweep concrete floors broom clean in unoccupied spaces.
  - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
  - g. Wash and wax resilient flooring and other flooring in accordance with manufacturers' recommendations.
  - h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - i. Remove labels that are not permanent.
  - j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  - 1. Wipe surfaces of equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - m. Replace parts subject to unusual operating conditions.
  - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - o. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning and dispose of waste materials. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

#### SECTION 017823 - OPERATION AND MAINTENANCE DATA

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Emergency manuals.
  - 2. Operation manuals for systems, subsystems, and equipment.
  - 3. Maintenance manuals for care and maintenance of products, materials, finishes, systems and equipment.

#### 1.3 SUBMITTALS

- A. Submittal: Submit (2) two copies of each manual in final form at least (15) fifteen days before requesting inspection for substantial. Architect will return copy with comments after inspection for substantial completion.
  - 1. Correct or modify each manual to comply with Architect's comments. Submit (3) three copies of each corrected manual within (15) fifteen days of receipt of Architect's comments.

### 1.4 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

#### PART 2 - PRODUCTS

### 2.1 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.

- 2. Table of contents.
- 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Name and address of Owner.
  - 4. Date of submittal.
  - 5. Name, address, and telephone number of Contractor.
  - 6. Name and address of Architect.
  - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
  - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
  - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
  - 4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
  - 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

## 2.2 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

- 1. Type of emergency.
- 2. Emergency instructions.
- 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for Fire, Flood, Gas leak, Water leak, Power failure, Water outage, System, subsystem, or equipment failure and Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

#### 2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Equipment identification with serial number of each component.
  - 4. Equipment function.
  - 5. Operating characteristics.
  - 6. Limiting conditions.
  - 7. Performance curves.
  - 8. Engineering data and tests.
  - 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.4 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Color, pattern, and texture.
  - 4. Material and chemical composition.
  - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions. Include instructions on methods and material agents known to be detrimental and to be avoided.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

### 2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
- D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, adjusting instructions, and demonstration and training video DVD if available, that detail essential maintenance procedures:

- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

### PART 3 - EXECUTION

## 3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
  - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

#### SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.

#### 1.3 SUBMITTALS

- A. Record Drawings and Specifications: Comply with the following:
  - 1. Number of Copies: Submit (1) one set of marked-up Record Prints and Project Specifications.CD containing scan of marked up record prints.

#### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Drawings: Maintain one set of ammonia free blue- or black-line white prints of the Contract Drawings and Shop Drawings.
  - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
- a. Dimensional changes to Drawings.
- b. Revisions to details shown on Drawings.
- c. Revisions to routing of piping and conduits.
- d. Revisions to electrical circuitry.
- e. Actual equipment locations.
- f. Locations of concealed internal utilities.
- g. Changes made by Change Order or Construction Change Directive.
- h. Changes made following Architect's written orders.
- i. Field records for variable and concealed conditions.
- j. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
- 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
- 5. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize Record Prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
  - 3. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

### 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
  - 5. Note related Change Orders, and Record Drawings where applicable.

# 2.3 RECORD PRODUCT DATA

A. Maintain one copy of each Product Data Submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up record drawings and specifications.

# 2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

# PART 3 - EXECUTION

# 3.1 RECORDING AND MAINTENANCE

- A. During the progress of the installation, keep a careful record of all changes and variations in its work from the layout shown on the Contract Drawings in order that the Owner may be provided with a complete set of all Contract Documents showing the work as actually installed.
- B. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project. Update the record Contract Documents in the field office in his presence on a weekly basis. In addition to marking the Construction Documents for as-built conditions, submit written reports describing each as-built update.
- C. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and reference during normal working hours.

# END OF SECTION 017839

### SECTION 017900 - DEMONSTRATION AND TRAINING

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video.

### 1.3 SUBMITTALS

- A. Demonstration and Training Schedule: Contractor shall prepare and submit to the Architect a list of all systems and equipment that they will be providing training for. The Schedule shall be submitted prior to the issuance of the Certificate of Substantial Completion. The list shall be generated from the requirements outlined in the project manual, and shall include the following;
  - 1. Spec Section.
  - 2. Name of System or Equipment.
  - 3. Number of Hours of Training to be provided.
  - 4. Miscellaneous Notes or Special Requirements.
- B. Instruction Program: Submit (2) two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module, no less than 10 days prior to the anticipated date of the Demonstration and Training. Include learning objective and outline for each training module.
  - 1. At completion of training, submit (2) two complete training manual(s) for Owner's use.
- C. Qualification Data: For Instructor.
- D. Attendance Record: For each training module, submit list of participants and length of instruction time.
- E. Demonstration and Training Video on DVD: Submit (2) two copies within (7) seven days of end of each training module.
  - 1. Identification: On each copy, provide an applied label with the following information:

- a. Name of Project.
- b. Name of Architect.
- c. Name of Contractor.
- d. Date of recording.

# 1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training. Credentials shall be presented at the time of demonstration and a copy of the credentials and contact information included with the Demonstration DVD.

# 1.5 COORDINATION

- A. The Demonstration and Training Schedule shall be submitted to the Architect and Owner no less than 14 calendar days prior to the first scheduled demonstration and training event.
- B. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- C. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.
- E. Timeline: The general time line and schedule regarding Demonstration and Training shall be as follows:
  - 1. Submit Operations and Maintenance Manuals to the Architect for Review
  - 2. Architect reviews and returns Operations and Maintenance Manuals to the Contractor
  - 3. Contractor submits Demonstration and Training Schedule to the Architect (14 days minimum prior to the commencement of training).
  - 4. Contractor submits Instruction Program(s) (10 days minimum prior to the commencement of training).
  - 5. Owner confirms availability for proposed training dates and times, and schedules a location for training to be held (3 days minimum prior to the commencement of training).

# PART 2 - PRODUCTS

# 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment, including, but not limited to, the following types of systems as provided:
  - 1. Equipment, including projection screens, laboratory fume hoods.
  - 2. Fire-protection systems, including fire alarm, and fire-extinguishing systems.

- 3. Intrusion detection systems.
- 4. Laboratory equipment, including laboratory air, gas and vacuum equipment and piping.
- 5. Heat generation, including boilers, pumps, and water distribution piping.
- 6. Plumbing systems, including fixtures, pumps, and water distribution piping.
- 7. Refrigeration systems, including chillers, cooling towers, condensers, pumps, and distribution piping.
- 8. HVAC systems, including air-handling equipment, air distribution systems, and terminal equipment and devices.
- 9. HVAC instrumentation and controls.
- 10. Electrical service and distribution, including transformers, switchboards, panelboards, uninterruptible power supplies, and motor controls.
- 11. Lighting equipment and controls.
- 12. Communication systems, including intercommunication, voice and data.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    - a. System, subsystem, and equipment descriptions.
    - b. Performance and design criteria if Contractor is delegated design responsibility.
    - c. Operating standards.
    - d. Regulatory requirements.
    - e. Equipment function.
    - f. Operating characteristics.
    - g. Limiting conditions.
    - h. Performance curves.
  - 2. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project Record Documents.
    - e. Identification systems.
    - f. Warranties and bonds.
    - g. Maintenance service agreements and similar continuing commitments.
  - 3. Emergencies: Include the following, as applicable:
    - a. Instructions on meaning of warnings, trouble indications, and error messages.
    - b. Instructions on stopping.
    - c. Shutdown instructions for each type of emergency.
    - d. Operating instructions for conditions outside of normal operating limits.
    - e. Sequences for electric or electronic systems.
    - f. Special operating instructions and procedures.
  - 4. Operations: Include the following, as applicable:
    - a. Startup procedures.

- b. Equipment or system break-in procedures.
- c. Routine and normal operating instructions.
- d. Regulation and control procedures.
- e. Control sequences.
- f. Safety procedures.
- g. Instructions on stopping.
- h. Normal shutdown instructions.
- i. Operating procedures for emergencies.
- j. Operating procedures for system, subsystem, or equipment failure.
- k. Seasonal and weekend operating instructions.
- 1. Required sequences for electric or electronic systems.
- m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
  - a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.
  - d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
  - h. Instructions on methods and material agents known to be detrimental and to be avoided.
- 8. Repairs: Include the following:
  - a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

### PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

### 3.2 SCHEDULING

- A. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner, through Architect, in accordance with requirements outlined in Section 1 above.
- B. The Owner shall not be liable for any additional costs related to rescheduling of training, provided that they gave a minimum of 48 hours' notice to the Contractor of the need to reschedule a Demonstration and Training Event.
- C. Should the Contractor fail to be prepared or show up on the agreed to date and time for training, this shall result in a reduction in the Contractor's Contract Amount of FIVE HUNDRED (\$500.00) DOLLARS per each occurrence as liquidated damages.

### 3.3 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner, with at least (7) seven days' advance notice.

### 3.4 DEMONSTRATION AND TRAINING VIDEO ON DVD

- A. General: Engage a qualified photographer to record demonstration and training videos. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
- B. Video Format: Provide high-quality DVD color.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.

### END OF SECTION 017900

## SECTION 023000-SUBSURFACE INVESTIGATION & TEST PITS

PART 1 – GENERAL

### 1.1 DESCRIPTION

- A. Excavation work under this Contract is unclassified and includes (without limitation thereto) excavation and removal of all soil, shale, rock, boulders, existing foundations, underground structures and utilities, fill and every kind of subsurface conditions encountered within the Contract limit lines. No extra or additional compensation for excavation will be paid under this Contract for unclassified excavation work included on the base bid.
- B. Existing utility information shown on the drawings has been collected from various sources and is not guaranteed as to accuracy or completeness. The Contractor shall verify all information to his satisfaction prior to excavation. Where existing utilities are to be crossed by proposed constructions, test pits shall be dug by the Contractor, at no additional cost to the Owner, and shall be dug prior to construction to ascertain existing inverts, materials, and sizes. Test pit information shall be provided to the Engineer prior to construction to permit adjustments as required to avoid conflicts. The Contractor shall notify the Engineer immediately if any field conditions encountered differ materially from those represented on the drawings. Such conditions could render the designs on the drawings inappropriate or ineffective.

# 1.2 UNIT PRICE - MEASUREMENT AND PAYMENT- NOT USED

# 1.3 ADDITIONAL INFORMATION

A. The Contractor shall visit the site and acquaint himself with all existing conditions prior to submittal of bid. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions, but such subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Owner.

### 1.4 QUALITY ASSURANCE

A. A Soil Engineer shall be retained by the Contractor to provide testing and continuous inspection of work in connection with excavating, filling, compacting, and grading. Re-adjust all work performed which does not meet technical or design requirements, but make no deviations from the Contract Documents without specific and written approval of the Architect. Soil Engineer shall be licensed in the State of New Jersey as a Professional Engineer. Contractor shall submit at least three (3) Soil Engineers to the Owner for consideration and approval. The Owner shall have final approval authority as to the selection of the Soil Engineer to be retained by the Contractor.

### END OF SECTION 023000

## SECTION 024119 - SELECTIVE DEMOLITION

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Provide all removal, proper and legal disposal work as required to complete selective demolition work and prepare existing areas for new work required including, but not limited to, the following:
  - 1. Demolition, removal and legal disposal off-site of selected portions of the building, construction assemblies, and other incidental work, whether shown or not shown, but required to complete the installation of scheduled work, coordinated with other trades and construction components being replaced by new construction.
  - 2. Disconnecting, capping or sealing, abandoning or removing utilities as indicated and/or required.
  - 3. Patching, repairing and replacing areas damaged or altered by demolition work, with new materials and construction similar in kind unless otherwise indicated.
  - 4. Salvage of existing items to be reused, relocated or recycled.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
  - 2. Section 017300 "Execution" for cutting and patching procedures.
  - 3. Section 017320 "Cutting and Patching".
  - 4. Section 028213 "Asbestos Abatement"

# 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

## 1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Owner reserves first right of refusal for removal and salvage items. Items indicated for removal and salvage remain the Owner's property. Remove, clean, and pack items to protect against damage and deliver to Owner's designated storage area with labels to identify contents of containers. Demolished materials shall become the Contractor's property and removed from the site with further disposition at the Contractor's option.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For demolition firm and refrigerant recovery technician.
- B. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, dust control and for noise control. Indicate proposed locations and construction of barriers.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Pre-demolition Photographs or Video: Submit before Work begins.
- E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- F. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

### 1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

### 1.7 FIELD CONDITIONS

- A. Owner will occupy portions of the buildings immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
  - 1. Coordinate with the Owner's continuing occupation and use of portions of the building to maintain safe emergency access to and from the facilities at all times.
  - 2. Provide minimum of (3) working days advance notice to Owner of demolition activities that will impact Owner's normal operations.

- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
  - 1. Before selective demolition, Owner will remove the following items:
    - a. Loose furnishings and non-built-in items.
    - b. Files, books, teaching props and the like.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.
- E. Hazardous Materials: Hazardous material are present in the building and materials / systems to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Specifications are included related to the confirmed locations and requirements for abatement and safety. Examine reports to become aware of locations where hazardous materials are present.
  - 1. Hazardous material remediation is specified elsewhere in the Contract Documents and is part of the scope of this contract work.
  - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified in the Contract Documents.

# PART 2 - PRODUCTS

### 2.1 PEFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

### PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. Inventory and record the condition of items to be removed and re-installed and items to be removed and salvaged.
- E. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect and Owner's Representative in accurate detail. Pending receipt of directive from Architect and/or Owner's Representative, rearrange demolition schedule as necessary to continue overall job progress without delay.
- F. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes and/or templates.
  - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs and/or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

# 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Use utility and material locator equipment to locate utilities, structural elements etc. concealed within the building's construction.
- B. Existing building fire protection system shall not be diminished. Removal of existing devices shall not occur until the new equipment is in place and ready for the switchover.
- C. Existing Services/Systems to Remain: Locate and maintain services/systems indicated to remain and protect them against damage.
  - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- D. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Arrange to shut off indicated utilities with utility companies.
  - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building. Provide minimum of (3) working days advance notice to Owner if shutdown of service is necessary during change-over.
  - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.

- a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
- b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
  - a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
  - b. Contractor's scope of work includes, and the Contractor is required and expected to, patch any hole(s) resulting in the removal and/or capping of plumbing fixture(s) and/or piping in a wall, ceiling or floor to remain to match existing conditions, unless otherwise noted.

# 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
  - 3. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas. Provide insulated temporary weather protection at heated spaces that are required to remain heated.
  - 4. Where temporary covered passageways are required or indicated, covers shall be constructed to sustain a minimum point loading of 500 lbs.
  - 5. Use utility and material locator equipment prior to cutting into existing construction to locate concealed utilities. By-pass or shut-off utilities anticipated to be near the demolition area.

- 6. Construct temporary, insulated, solid, dustproof, partitions where required to separate areas where extensive dirt, dust, thermal and noisy operations are performed. Equip partitions with dustproof doors and security locks where passage is required. Use sound insulation to protect against noise and thermal insulation to protect against changes in temperature.
- 7. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
- 8. Cover and protect furniture, furnishings, and equipment that have not been removed.
- 9. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- 10. Maintain dust-proof partitions and closures as required preventing spread of dust or fumes to occupied portions of the building.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- D. Damages: Notify the Architect and Owner of any damages. Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.
- E. Traffic: Conduct demolition operations and debris removal in a manner to ensure minimum interference with pedestrian and vehicular access and exit routes as well as other adjacent occupied or used facilities.
- F. Explosives: Use of explosives will not be permitted.
- G. Pollution Controls: Use temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in the air to lowest practical level. Maintain a minimum of 0.1 inches of water, negative pressure from point of enclosure. The area shall be exhausted from a location as remote as possible from unaltered areas. The point of exhaust shall be a minimum of 25 feet from any air intake or building opening in compliance with regulations as established by the environmental protection agency and applicable governmental and local requirements.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

- 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
- 5. Maintain adequate ventilation when using cutting torches.
- 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- 7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- 8. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- 9. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- 10. Where repairs to existing surfaces are required, patch to produce surfaces with the integrity and visual appearance of the original installation when it was new and suitable for new scheduled finish materials.
- 11. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- 12. Patch and repair all surfaces in the newly created space(s) where demolition work extends from one finished area into another. Provide a flush and even surface of uniform stability, color and appearance.
  - a. Closely match integrity, texture and finish of existing adjacent surfaces as when they were newly installed.
  - b. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
  - c. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the surface has received primer and first finish coat.
  - d. Remove existing applied finishes over the entire unbroken surface area and replace with new materials, if necessary, to achieve uniform color and appearance.
  - e. Inspect and test patched areas to demonstrate integrity of the installation, where feasible.
- B. Removed and Salvaged Items:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
  - 1. Clean and repair items to functional condition adequate for intended reuse.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.

- 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

# 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

# 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials and dispose of at designated spoil areas on Owner's property.

### 3.7 REPAIRS

- A. Use repair materials identical to existing materials to the fullest extent possible.
- B. Where identical materials are unavailable or cannot be used for exposed surfaces, code or hazard issues, use code compliant materials that visually match and are compatible with existing adjacent surfaces, that are free of damage, defects, deterioration, as originally installed when new, to the fullest extent possible pending approval by the Architect.

C. Use materials whose installed performance equals or surpasses that of the existing materials as originally installed and complies with applicable codes.

### 3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.
- B. Change filters on air handling equipment at completion of selective demolition operations.

# END OF SECTION 024119

### SECTION 024120 - SELECTIVE SITE DEMOLITION

# PART 1 – GENERAL

# 1.1 RELATED DOCUMENTS

A. General Conditions, Supplementary Conditions and Division 1-General Requirements, apply to work of this section.

### 1.2 WORK INCLUDED

- A. Demolish, except as specifically excluded by provisions of this section:
  - 1. Existing work obstructing new work.
  - 2. Existing work indicated on Drawings to be removed.
  - 3. Existing work below grade obstructing new construction.
- B. Remove from the project site, and dispose of in a legal manner, materials and equipment removed as selective demolition work, except:
  - 1. Materials and equipment to be incorporated into new work.
  - 2. Materials and equipment to be delivered to Owner.
- C. Phasing: Perform selective demolition in phases as required by Owner's use of portions of the site. Coordinate pavement demolition with the owner to insure that portions of the site remain accessible.
- D. Install 6 foot high temporary construction security fencing around the perimeter of all construction areas to protect the general public. An exact amount of fencing may not be shown on the drawings and the Owner reserves their right to require as much fencing as needed to maintain construction site safety and security. As a minimum, the Contractor shall provide enough temporary construction fencing to encompass the entire limit of disturbance as noted on the Soil Erosion & Sediment Control Plan. All active work areas shall be fenced to prevent public access until such time as all surfaces are restored to a safe and uniformly graded condition. See section 015000 for additional information.

# 1.3 RELATED SECTIONS

A. 311000: Site Clearing

# 1.4 SUBMITTALS

A. Schedule of Operations: Include coordination for shut-off, capping, and continuation of utility services as required, together with details for dust and noise control protection, in sufficient detail to ensure uninterrupted progress of Owner's on-site operations.

B. Details: Provide schedule for site demolition to the Owner and Architect and adjust same accordingly, based upon work being performed on the site under other contracts.

# 1.5 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Supervision: Perform selective demolition under the direct supervision of a qualified construction superintendent, experienced in type of construction involved.
  - 2. Skills: Where selective demolition terminates at existing work to remain, perform work using craftsmen skilled in materials and systems involved.
- B. Pre-demolition Work:
  - 1. Engage the services of a private underground utility location company to mark the location of all underground utilities present within construction areas and at least 50 feet beyond.
  - 2. Compare the utility locations shown on the Existing Conditions plan with those locations marked in the field. Using a licensed professional land surveyor, survey the location of any utility found to be in a significantly different location, a location not identified on the plan, or in a location that will conflict with future construction. Provide a drawing (to scale) to the Engineer illustrating the utility locations found in the field, versus those represented on the Existing Conditions Plan.
  - 3. Test Pits: Perform open excavation test pits in areas noted on the plans and where ground penetrations will occur proximate to utilities shown on the plans or as marked out in the field per subpart 1.5.B.1 above. Also perform open excavation test pits in areas where new utility or other construction work is proposed proximate to underground utilities shown on the construction drawings or as identified during the mark-out described in subpart 1.5.B.1 above. Include up to four (4) discretionary test pits when/if required by the Engineer, to verify the depth, size, and alignment of underground utilities that may be in conflict with future construction or are found to be located significantly different than the Existing Conditions plan depicts. In all cases where test pits are performed, survey the size, depth, and alignment of the unearthed utility(ies) present and report this information to the engineer (overlay this information on a copy of the Existing Conditions plan).
  - 4. Use vacuum excavation procedures when excavating test pits within 20 feet of a marked gas main or service pipe.
  - 5. All utilities shall be field verified by the contractor and this information shall be presented to the Engineer not less than 2 weeks prior to the ordering of materials, or the procurement of equipment related to the installation of underground utilities.
- C. Compaction of Demolition Areas.
  - 1. The Owner shall engage a Geotechnical Engineer, licensed in the State of New Jersey, to oversee and certify all compaction. The Contractor shall ensure that the Geotechnical Engineer is present during all earthwork operations. Comply with the field instructions given by the soils engineer as it pertains to the demolition and backfilling of subsurface features. The geotechnical engineer shall be present to verify the compaction of all backfill, fill, and other earthwork relative to disturbance caused by demolition work.

### 1.6 PROJECT CONDITIONS

- A. Coordinate this work with the work of other sections to avoid any delay or interference with other work.
- B. Condition of Structure(s): By submitting its bid, the Contractor represents that it has fully examined the conditions of the building(s), grounds, and surrounding areas. The Owner assumes no responsibility for actual condition of items or structure(s) to be selectively demolished.
  - 1. Conditions existing at time of inspection for bidding will be maintained by Owner insofar as practicable. However, variations within the site and surrounding structures may occur by Owner's daily use of the premises prior to start of selective demolition work. No claims for additional cost due to such variations shall be considered.
  - 2. The Contractor shall continually assess the structural adequacy of nearby structures as demolition proceeds and conditions are uncovered. If previously unseen or unknown structural elements are encountered, promptly advise the Owner and Engineer and wait for instructions before proceeding further.
  - 3 The contractor shall photograph and catalog the structural condition of each adjacent structure, paying particular attention to the condition of existing foundations, evidence of cracks, poor condition of masonry, or other poor site conditions that exist before demolition and construction begins. The purpose of this exercise is to obtain a record of adjacent site conditions before work begins, in order to evaluate potential future claims of property damage caused by vibrations, noise, seismic disturbances, or direct impact. NOTE: The contractor is encouraged to video record the condition of the property in addition to obtaining a photographic record.
  - 4 The contractor shall periodically assess the structural condition of adjacent structures throughout demolition and construction, in order to insure that the condition of the structure is not being compromised. The contractor shall repair any damage to adjacent structures, to the satisfaction of the Owner and the local Building Department, at no additional cost to the Owner.
  - 5 If the contractor fails to photographically document the condition of existing structures as noted above, then, by default, he assumes all responsibility for mitigating claims of property damage. Photographically documenting the condition of existing facilities does not relieve the contractor from any responsibility for repairing subsequent damage to the facility. The contractor will be held responsible for repairing any property damage that can be justifiably linked to the contractor's demolition or construction activities.
- C. Protection:
  - 1. Provide protective measures as required to provide free and safe passage of persons to and from occupied portions of the site and around areas of demolition.
    - a. Ensure that adequate illumination, exit signs and warning signs, included as Temporary Facilities work, are in place whenever such passage is required.
    - b. Ensure that all areas adjacent to work areas are kept in a clean and safe condition at all times. Install temporary construction fencing as needed, and as directed by the owner to insure the safety of the public.
    - c. If pavements or other hard surfaces are to be removed in public areas, and not immediately restored, install temporary bituminous pavement patch flush with all surfaces and uniform in grade, and maintain said patch until permanent hard surfaces are installed.

- 2. Provide necessary shoring, bracing, and support to prevent movement, settlement, or collapse of structures or elements adjacent to areas being demolished, and adjacent facilities and structures to remain.
- 3. Protect existing finished work to remain in place that becomes exposed during demolition operations from damage.
- 4. Protect existing curbing, pavement, fencing and walls that are designated to remain. Terminate demolition at clean control joints or if joints or seams are not present, carefully sawcut materials to provide a mend-able edge that can be re-secured or otherwise treated for assimilation into future work or work to remain.
- 5. Provide temporary weather protection during interval between demolition, removal of existing construction on exterior surfaces and installation of new construction, to ensure that no water leakage or weather related damage occurs to exterior or interior areas of existing building or structure.
- D. Traffic: Conduct demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Comply with requirements of authorities having jurisdiction.
- E. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied or facilities in use, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
  - 1. If utility systems, including mechanical or electrical systems, are encountered, that are not indicated to remain but give evidence of being in use, promptly advise the Owner and Engineer for instructions before proceeding.
- F. Advise the Owner, in writing, of encounter with materials suspected to be of a hazardous nature. These materials are not to be handled or removed under this Contract.

# PART 2 – PRODUCTS

# 2.1 TEMPORARY CONSTRUCTION FENCE

- A. Furnish and install temporary metal construction security fence, 6 feet high, with lockable access gates at appropriate locations that facilitate work and site access. All active work areas shall be fenced from the general public to prevent trespass. Provide vehicle access gates and man gates as needed to accommodate the work. Provide locks and chains as needed to secure gates to each active work area and provide 2 extra sets of padlock keys to the Owner. Minimum fence shall be galvanized steel, chain link, 11 gauge, 2 inch mesh opening, with medium duty rails and posts.
- B. All fencing shall be checked daily for damage or sharp edges and mended accordingly.

### 2.2 BACKFILL VOIDS FROM DEMOLITION

A. Backfill voids resulting from demolition work with Dense Graded Aggregate per New Jersey Department of Transportation specifications. See Earthwork specification for additional requirements.

# PART 3 – EXECUTION

# 3.1 EXAMINATION

- A. Examine areas in which work is to be performed. Report to the Owner all prevailing conditions that will adversely affect satisfactory execution of work. Do not proceed with work until unsatisfactory conditions have been corrected.
- B. Starting work constitutes acceptance of the existing conditions and the Contractor shall then be responsible for correcting all unsatisfactory and defective work encountered at its expense.
- C. The following is repeated from another section in these specifications to insure that the contractor recognizes this provision of the contract:
  - 1. The contractor shall photograph and catalog the physical condition of each structure adjacent to work areas, paying particular attention to the condition of existing foundations, evidence of cracks, poor condition of masonry, or other poor site conditions that exist before demolition and construction begins. The purpose of this exercise is to obtain a record of adjacent site conditions before work begins, in order to evaluate potential future claims of property damage caused by vibrations, noise, seismic disturbances, or direct impact. NOTE: The contractor is encouraged to video record the condition of the property in addition to obtaining a photographic record.
  - 2. The contractor shall periodically assess the structural condition of adjacent structures throughout demolition and construction, in order to insure that the condition of the structure is not being compromised. The contractor shall repair any damage to adjacent structures, to the satisfaction of the Owner and the local Building Department, at no additional cost to the Owner.
  - 3. If the contractor fails to photographically document the condition of existing structures as noted above, then, by default, it assumes all responsibility for mitigating claims of property damage. Photographically documenting the condition of existing facilities does not relieve the contractor from any responsibility for repairing subsequent damage to the facility. The contractor will be held responsible for repairing any damage that can be justifiably linked to the contractor's demolition or construction activities.

# 3.2 PREPARATION

- A. Prior to commencement of work, the Contractor and Owner shall inspect respective demolition areas and:
  - 1. Tabulate and, if appropriate, photograph (and video record if feasible) existing conditions which could be misconstrued as damage resulting from selective demolition work and,
  - 2. File record photographs and video with Owner prior to starting work and,
  - 3. Confirm that items to be removed by the Owner have been removed.

4. Contact appropriate utility companies to schedule utility location mark-outs. The contractor shall also engage the services of an independent utility location service to identify and locate all utilities within the scope of construction. All costs associated with the location of utilities shall be borne by the contractor. Maintain mark-out throughout the duration of construction.

### 3.3 SITE DEMOLITION

- A. General: Perform work using methods which comply with governing regulations, and which produce proper surfaces to receive new work.
- B. Concrete and Masonry: Demolish in small sections. Cut at junctures near construction to remain by using power-driven saws or hand tools; do not use power-driven impact tools.
- C. Locate equipment and promptly remove debris to avoid imposing excessive loads on structure.
- D. Remove large components and lower to ground by means of hoists, derricks, or other methods which afford complete control.
- E. Exterior demolition work: Make necessary provisions to ensure continuous watertight integrity of work to remain.
- F. Explosives: Use of explosives is not permitted.

### 3.4 DUST CONTROL

- A. Comply with governing regulations pertaining to prevention of raising excessive dust and dirt.
- B. Use water sprinkling, temporary enclosures, and other suitable methods to minimize amounts of dust and dirt rising and scattering in the air.
  - 1. Do not use water sprinkling when it may create hazardous or objectionable conditions such as ice, flooding, polluted runoff, or damage.

### 3.5 SALVAGE MATERIALS

- A. Verify that the owner has salvaged all materials from the site that they want to retain.
- B. Carefully dismantle (retain hardware and fasteners in re-sealable containers) all features that the owner asks to retain. Store salvaged materials off site and/or deliver salvaged materials to a location specified by the owner.

#### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove debris, rubbish and other materials resulting from demolition operations from project site. Do not bury demolished materials on the project site. Transport and legally dispose of materials off site.
- B. On site burning of removed materials is not permitted.

C. Storage or sale of removed materials shall not be permitted on the site, except storage of materials to be re-used or furnished to Owner.

## 3.7 CLEAN-UP AND REPAIR

- A. Return structure(s) and surfaces to remain to condition existing prior to start of demolition work. Repair adjacent construction and surfaces soiled or damaged by excessive demolition work to original or better condition.
- B. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave work areas broom clean.

### 3.8 TEMPORARY CONSTRUCTION FENCING

- A. Embed fencing in earth or provide freestanding base units that are stable to withstand overturning. The maximum gap between the bottom of fence and ground shall be 3 inches.
- B. Secure and guy fencing as needed to provide a contiguous perimeter around all work areas.

### END OF SECTION 024120

### SECTION 033000 - CAST-IN-PLACE CONCRETE

# PART 1 – GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

# 1.2 SECTION INCLUDES

- A. Provide concrete work not specified in other sections.
- B. Install, in concrete work, anchorages, reglets and other accessories furnished under other sections.
- C. Provide testing and inspection of concrete work.

# 1.3 RELATED SECTIONS

- A. Section 03 30 00.01: Concrete Formwork.
- B. Section 32 13 13: Portland Cement Concrete Paving & Curbs.

# 1.4 REFERENCED STANDARDS

- A. ACI American Concrete Institute:
  - 1. 211.1: Recommended Practice in Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
  - 2. 211.2: Recommendation Practice for selecting Proportions for Structural Lightweight Concrete.
  - 3. 214: Recommended Practice for Evaluation of Strength Test Results of Concrete.
  - 4. 301: Specifications for Structural Concrete for Buildings.
  - 5. 302.1R: Guide for Concrete Floor and Slab Construction.
  - 6. 304: Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
  - 7. 304.2R Placing Concrete by Pumping Methods.
  - 8. 305R Hot Weather Concreting.
  - 9. 306R Cold Weather Concreting.
  - 10. 308 Standard Practice for Curing Concrete.
  - 11. 309 Standard Practice for Consolidation of Concrete.
  - 12. 318 Building Code Requirements for Reinforced Concrete.
- B. CRSI Concrete Reinforcing Steel Institute:
  - 1. Manual of Standard Practice.
- C. ASTM American Society for Testing and Materials:
  - 1. Standard Specifications and Test Methods referenced in Part 2 Products and Part 3 Execution.
- D. NRMCA National Ready Mixed Concrete Association:

1. Concrete Plant Standards and Truck Mixer and Agitation Standards.

### 1.5 SUBMITTALS

- A. Product Data: Submit data for manufactured materials and items, including admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by Architect.
- B. Compliance: Submit laboratory test reports for concrete materials and mix design tests as specified.
  - 1. Submit each admixture manufacturer's written certification that chloride ion content complies with specified requirements.

### 1.6 QUALITY ASSURANCE

- A. Concrete Testing Service: An independent Materials Testing and Inspection Company shall perform material evaluation tests and design concrete mixes.
- B. Materials and installed work may require testing and retesting, as directed by Architect. Allow free access to material stockpiles and facilities.

### 1.7 REGULATORY REQUIREMENTS

A. Comply with the applicable provisions of codes, standards and specifications referenced in this section.

### PART 2 - PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS
  - A. Subject to compliance with requirements, provide listed products of one of the manufacturers listed for each product type.

### 2.2 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I or II, unless otherwise acceptable to Architect.
  - 1. Use one brand of cement throughout project, unless otherwise reviewed by Architect.
- B. Normal Weight Aggregates: ASTM C33, and as specified. Provide aggregates from a single source for exposed concrete.
  - 1. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.
- C. Water: Drinkable.
- D. Air-Entraining Admixture: ASTM C260.
  - 1. Reference Model and Manufacturer:
    - a. "Air-Mix" by Euclid Chemical Co.
    - b. "Sika Aer" by Sika Corp.
    - c. "MB-VR or MB-AE" by Master Builders.
    - d. "Darex AEA" or "Daravair" by W. R. Grace.
    - e. Or Approved Equal.

- E. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.1 percent chloride ions.
  - 1. Reference Model and Manufacturer:
    - a. "WRDA Hycol" by W.R. Grace
    - b. "Eucon WR-75" by Euclid Chemical Co.
    - c. "Pozzolith Normal by Master Builders.
    - d. "Plastocrete 161" by Sika Chemical Corp.
    - e. Or Approved Equal.
- F. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C494, Type F or Type G and containing not more than 0.1 percent chloride ions.
  - 1. Reference Model and Manufacturer:
    - a. "WRDA 19" or "Daracem" by W.R. Grace.
    - b. "Sikament 300" by Sika Chemical Corp.
    - c. "Eucon 37" by Euclid Chemical Co.
    - d. "Rheobuild" by Master Builders.
    - e. Or Approved Equal.
- G. Water-Reducing, Non-Chloride Accelerator Admixture: ASTM C494, Type E, and containing not more than 0.1 percent chloride ions.
  - 1. Reference Model and Manufacturer:
    - a. "Accelguard 80" by Euclid Chemical Co.
    - b. "Pozzolith 20" by Master Builders.
    - c. Or Approved Equal.
- H. Water-Reducing, Retarding Admixture: ASTM C494, Type D, containing not more than 0.1 percent chloride ions.
  - 1. Reference Model and Manufacturer:
    - a. "Pozzolith Retarder" by Master Builders.
    - b. "Eucon Retarder 75" by Euclid Chemical Co.
    - c. "Daratard-17" by W.R. Grace.
    - d. "Plastiment" by Sika Chemical Co.
    - e. Or Approved Equal.
- I. Calcium chloride or admixtures containing more than 0.1 percent chloride ions are not permitted.

# 2.3 RELATED MATERIALS

- A. Moisture Retarder: Polyethylene sheet not less than 6 mils thick.
- B. Non-Shrink Grout: CRD-C 621, factory pre-mixed. Provide one of the following:
  - 1. Non-metallic Reference Products and Manufacturer:
    - a. "Set Grout" by Master Builders.
    - b. "Sonogrout" by Sonneborn-Rexnord.
    - c. "Euco-NS" by Euclid Chemical Co.
    - d. "Sure-Grip Grout" by Dayton Superior Corp.
    - e. "Horngrout" by A. C. Horn.
    - f. "Five Star Grout" by U.S. Grout Corp.
    - g. Or Approved Equal.

- C. Chemical Hardener:
  - 1. Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, not less than 2 lbs. of fluosilicates per gal.
  - 2. Reference Product and Manufacturer:
    - a. "Surfhard" by Euclid Chemical Co.
    - b. "Saniseal" by Master Builders.
    - c. "Burk-O-Lith" by The Burke Co.
    - d. Or Approved Equal.
- D. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M182, Class 2.
- E. Moisture-Retaining Cover: One of the following, complying with ASTM C171.
  - 1. Waterproof paper.
  - 2. Polyethylene film.
  - 3. Polyethylene-coated burlap.
- F. Liquid Membrane Forming Curing Compound:
  - 1. ASTM C309, Type I, Class A; Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq ft./gal.
  - 2. Reference Product and Manufacturer:
    - a. "Masterseal" by Master Builders.
    - b. "Clear Seal" by A. C. Horn.
    - c. "J-20 Acrylic Cure" by Dayton Superior.
    - d. "Spartan-Cote" by The Burke Co.
    - e. "Dressand Seal 18" by L & M Construction Chemicals, Inc.
    - f. Or Approved Equal.
- G. Bonding Compound:
  - 1. Acrylic base Reference Product and Manufacturer:
    - a. "J-40 Bonding Agent" by Dayton Superior Corp.
    - b. "Everbond" by L & M Construction Chemicals.
    - c. "Hornweld" by A. C. Horn.
    - d. "Sonocrete" by Sonneborn-Rexnord.
    - e. "Acrylic Bondcrete" by The Burke Co.
    - f. "Daraweld C" by W.R. Grace.
    - g. "Armatec 110 EpoCem" by Sika Products.
    - g. Or Approved Equal.
- H. Epoxy Adhesive:
  - 1. ASTM C881, two component material suitable for use on dry or damp surfaces; Type, Grade, and Class to suit project requirements.
  - 2. Reference Product and Manufacturer:
    - a. "Epoxtite Binder 2390" by A. C. Horn.
    - b. "Edoco 2118 Epoxy Adhesive" by Edoco Technical Prod.
    - c. "Sikadur 32 Hi-Mod" by Sika Chemical Corp.
    - d. "Euco Epoxy 452 or 620" by Euclid Chemical Co.
    - e. "Epoxy M.V." by The Burke Co.
    - f. Or Approved Equal.

- I. Patching Material:
  - 1. Thin coat cement-based, early strength gaining, patching materials for horizontal concrete repairs, include:
    - a. "Sika Repair 222" by Sika Products
    - b. "Meadowpatch T1" by WR Meadows
    - c. "Duracrete" by Laticrete International
    - d. Or Approved Equal.

# 2.4 PROPORTIONING AND DESIGN OF MIXES

- A. Methods: Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. Use an independent Testing Agency acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.
- B. Submit written reports to Architect of each proposed mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Architect.
- C. Properties of Concrete: Design mixes to provide normal weight concrete with the properties indicated on the drawings and schedules.
- D. Adjustment to mixes may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as reviewed by Architect. Laboratory test data for revised mix design and strength results must be submitted to and as reviewed by Engineer before using in work.
- E. Admixtures:
  - 1. Use water-reducing admixture or high range water-reducing admixture (super plasticizer) in concrete as required for placement and workability.
  - 2. Use non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50 degrees F (10 degrees C).
  - 3. Use air-entraining admixture in exterior exposed concrete. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within following limits:
    - a. Concrete structures and slabs:
      - 1) 4.5 percent (moderate exposure); 5.5 percent (severe exposure) 1-1/2 inches max. aggregate.
      - 2) 4.5 percent (moderate exposure); 6.0 percent (severe exposure) 1 inch max. aggregate.
      - 3) 5.0 percent (moderate exposure); 6.0 percent (severe exposure) 3/4 inch max. aggregate.
      - 4) 5.5 percent (moderate exposure); 7.0 percent (severe exposure) 1/2 inch max. aggregate.
    - b. Other Concrete: 2 percent to 4 percent air.
  - 4. Use admixtures for water-reducing and set-control in strict compliance with manufacturer's directions.
- F. Water-Cement Ratio: Provide concrete with maximum water-cement (WC) ratios as indicated on the drawings and schedules.
- G. Slump Limits at Point of Placement:

- 1. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
- 2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
- 3. Concrete containing HRWR admixture (super plasticizer): Not more than 8 inches at point of discharge after addition of HRWR to verified 2 inches to 3 inches slump concrete.
- 4. Other concrete: Not more than 4 inches.

### 2.5 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C94, and as specified. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required.
  - 1. When air temperature is between 85 degrees F and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.
  - 2. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.
- B. Job-Site Mixing: Mix materials for concrete in drum type batch machine mixer. For mixers one cu. yd., or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes, after ingredients are in mixer, before batch is released. For mixers larger than one cu. yd., increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cu. yd., or fraction thereof.

### PART 3 - EXECUTION

### 3.1 CONCRETE PLACEMENT

- A. General: Comply with ACI 304 as specified.
- B. Inspection: Before placing concrete, inspect formwork, reinforcing, and items to be embedded or castin. Notify other trades to complete installation of their work; cooperate in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- C. Deposit concrete continuously or in layers of such thickness that no concrete shall be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. Provide construction joints where sections cannot be placed continuously. Deposit concrete as close as possible to its final location to avoid segregation.
  - 1. Deposit concrete in forms in horizontal layers not deeper than 24 inches; avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
- D. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping, in accordance with ACI recommended practices.

- 1. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embeddent of reinforcement and other embedded items without causing segregation of mix.
- E. Maintain reinforcing in proper position during concrete placement operations.
- F. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified. When air temperature has fallen to or is expected to fall below 40 Degrees F uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F, and not more than 80 degrees F at point of placement.
  - 1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  - 2. Do not use calcium chloride, salt or other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.
- G. Hot Weather Placing: When hot weather conditions exist that could impair quality and strength of concrete, place concrete in compliance with ACI 305 and as follows:
  - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled. Chopped ice may be used to control temperature provided water equivalent of ice is calculated in total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
  - 2. Cover reinforcing steel with water-soaked burlap if necessary, so that steel temperature shall not exceed the ambient air temperature immediately before embedment in concrete. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.
  - 3. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

# 3.2 FINISHES, FORMED SURFACES

- A. Rough Form Finish: Formed concrete surfaces not exposed to view in the finished work and other areas as indicated: Concrete surface shall have texture of form facing material used, with the holes and defective areas repaired and patched and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
- B. Smooth Form Finish: Formed concrete surfaces exposed to view in the finished work and other areas as indicated: As-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams; repair and patch defective areas, and completely remove and smooth fins and other projections.

# 3.3 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

- 1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- 2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- B. Moisture Curing: At Contractor's option, cure by one of the following methods:
  - 1. Covering with water to keep concrete surface continuously wet.
  - 2. Continuous water-fog spray.
  - 3. Covering concrete surfaces and edges with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover with 4 inches lap over adjacent covers.
- C. Curing Formed Surfaces: Compound cure formed surfaces including walls, and other vertical surfaces within 2 hours of removing forms.
  - 1. Curing and Sealing Compound: Use to cure exterior slabs. Do not use on surfaces which are to be covered with coating material applied directly to concrete.

### 3.4 MISCELLANEOUS CONCRETE WORK

A. Filling-In: Fill-in holes and openings left in concrete work for work by other trades, after work of other trades is in place. Mix, place and cure concrete as specified and to match in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

### 3.5 CONCRETE REPAIRS

- A. General:
  - 1. Repair and patch defective areas, where repair rather than replacement is recommended by Architect.
  - 2. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer.
  - 3. Surface defects include cracks, spalls, air bubbles, honeycomb, and rock pockets.
  - 4. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar shall match color of adjacent concrete. Make test patches at inconspicuous locations to verify mixture and color match before proceeding with further patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
  - 5. Dry-pack Repair: Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.
  - 6. Perform structural repairs with prior approval of Architect for method and procedure, using specified epoxy adhesive and mortar.
  - 7. Repair methods not specified below may be used, subject to prior review of Architect.

- B. Repair of Formed Surfaces: Perform repairs immediately after removal of forms. Cut out honeycombing, rock pockets, voids over 1/4 inch in dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to concrete surface. Thoroughly clean, dampen with water and brush-coat area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried. Flush out form tie holes, fill with dry pack mortar or precast cement cone plugs secured in place with bonding agent.
  - 1. For formed surfaces to be exposed in the finished work, defects include also color and texture irregularities, and stains and other discolorations that cannot be removed by cleaning.
  - 2. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.
- C. Repair of Unformed Surfaces:
  - 1. Test tops of slabs and other unformed surfaces for smoothness, and verify that surface planes are within tolerances specified for each surface and finish. Test surfaces sloped to drain for trueness of slope, using a template having required slope.
    - a. Correct high areas by grinding, after concrete has cured at least 14 days.
    - b. Correct low areas during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Architect.
  - 2. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects include crazing, cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width; spalling, pop-outs, honeycomb, rock pockets and other objectionable conditions.
    - a. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance completely around steel. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
    - b. Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry pack after bonding compound has dried.

# 3.6 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. Engage the services of an independent materials testing and inspection company.
- B. Comply with requirements of ASTM C172, Sampling Freshly Mixed Concrete, except modified for slump to comply with ASTM C94.
- C. Sampling and testing for quality control during placement of concrete includes the following:
  - 1. Slump: ASTM C143; one test at point of discharge for each set of compression test samples taken; additional tests when concrete consistency seems to have changed.

- 2. Air Content: ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231 pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
- 3. Concrete Temperature: Test hourly when air temperature is 40 degrees F and below, and when 80 degrees F and above; and each time a set of compression test specimens is made.
- 4. Compression Test Specimen: ASTM C31; one set of 4 standard cylinders for each compressive strength test, unless additional cylinders directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
- 5. Compressive Strength Tests: ASTM C39; one set for each day's pour plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in a single day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
- 6. Provide not less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.
- 7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
- 8. Strength level of concrete shall be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive by more than 500 psi.
- D. Test results shall be reported in writing to Architect within 24 hours of time that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.
- E. Additional Tests: The testing service shall make additional tests of in-place concrete, as directed by Architect, when test results indicate specified concrete strengths or other characteristics have not been attained. Testing service shall conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for such initial tests, and additional testing required, when unacceptable concrete is verified.
  - 1. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

# END OF SECTION 033000

## SECTION 040120 - MAINTENANCE OF UNIT MASONRY

# PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section includes maintenance of unit masonry consisting of brick clay masonry restoration and cleaning as follows:
  - 1. Repairing unit masonry, including replacing units.
  - 2. Repointing joints.
  - 3. Preliminary cleaning, including removing plant growth.
  - 4. Cleaning exposed unit masonry surfaces.
- B. The scope of the masonry restoration work includes the replacement of masonry units removed to facilitate installation of mechanical equipment..

### 1.3 DEFINITIONS

A. Low-Pressure Spray: 100 to 400 psi (690 to 2750 kPa); 4 to 6 gpm (0.25 to 0.4 L/s).

### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
  - 1. Full-size patterns with complete dimensions for new special shapes brick and their jointing, showing relation of existing to new units.
  - 2. Provisions for expansion joints or other sealant joints.
- C. Samples: For each exposed product and for each color and texture specified.

### 1.5 QUALITY ASSURANCE

A. Restoration Specialist Qualifications: Engage an experienced masonry restoration and cleaning firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience installing standard unit masonry is not sufficient experience for masonry restoration work.

- 1. At Contractor's option, work may be divided between two specialist firms: one for cleaning work and one for repair work.
- 2. Field Supervision: Restoration specialist firms shall maintain experienced full-time supervisors on Project site during times that clay masonry restoration and cleaning work is in progress.
- 3. Restoration Worker Qualifications: Persons who are experienced in restoration work of types they will be performing. When masonry units are being patched, assign at least one worker among those performing patching work who is trained and certified by manufacturer of patching compound to apply its products.
- B. Preinstallation Conference: Conduct conference at Project site.

# 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons.
- B. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store lime putty covered with water in sealed containers.
- F. Store sand where grading and other required characteristics can be maintained and contamination avoided.

# 1.7 PROJECT CONDITIONS

- A. Repoint mortar joints and repair masonry only when air temperature is between and 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least 7 days after completion of work.
- B. Cold-Weather Requirements: Comply with the following procedures for masonry repair and mortar-joint pointing:
  - 1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
  - 2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 7 days after repair and pointing.
- C. Hot-Weather Requirements: Protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and
repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above.

- D. Patch masonry only when air and surface temperatures are between and 55 and 100 deg F (13 and 38 deg C) and are predicted to remain above 55 deg F (13 deg C) for at least 7 days after completion of work. On days when air temperature is predicted to go above 90 deg F (32 deg C), schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.
- E. Clean masonry surfaces only when air temperature is 40 deg F (4 deg C) and above and is predicted to remain so for at least 7 days after completion of cleaning.

## 1.8 SEQUENCING AND SCHEDULING

- A. Order replacement materials at earliest possible date, to avoid delaying completion of the Work.
- B. Order sand for repointing mortar immediately after approval of samples. Take delivery of and store at Project site a sufficient quantity of sand to complete Project.
- C. Perform masonry restoration work in the following sequence:
  - 1. Remove plant growth.
  - 2. Repair existing masonry, including replacing existing masonry with new masonry materials.
  - 3. Rake out joints that are to be repointed.
  - 4. Point mortar joints.
  - 5. Inspect for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
  - 6. Clean masonry surfaces.
- D. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units to comply with Part 3 requirements.

## PART 2 - PRODUCTS

## 2.1 MASONRY MATERIALS

- A. Face Brick: Provide face brick, including specially molded, ground, cut, or sawed shapes where required to complete masonry restoration work. Contractor is to remove and save as much existing brick as possible for re-installation.
  - 1. Provide units with physical properties, colors, color variation within units, surface texture, size, and shape to match existing brickwork physical properties determined when tested as follows:
    - a. Physical Properties per ASTM C 67 for:
      - 1) Compressive Strength.
      - 2) 24-Hour Cold-Water Submersion Absorption.

- 3) 5-Hour Boil Absorption.
- 4) Saturation Coefficient.
- 5) Initial Rate of Absorption.
- b. Face Brick Standard: ASTM 216 and as follows:
  - 1) Grade SW, severe weather.
  - 2) Type FBS
  - 3) Size: Standard size (not modular), 3 5/8" x 2 ¼" x full 8"
- c. Provide (3) three separate brick to match the existing in (3) three different locations on the building. For existing brickwork that exhibits a range of colors or color variation within units or within the brick pattern, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
- d. Provide brick from a plant that can manufacture a full 8 inch brick
- B. Building Brick: Provide building brick complying with ASTM C 62, Grade SW where in contact with earth, Grade SW, MW, or NW for concealed backup; and of same vertical dimension as face brick, for masonry work concealed from view.

## 2.2 MORTAR MATERIALS

- A. Provide mortar that matches existing in color and composition as recommended by the masonry restoration contractor after evaluation of the existing mortar.
- B. Portland Cement: ASTM C 150, Type I or Type II, white or gray or both as required for color matching of exposed mortar.
  - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Mortar Sand: ASTM C 144 unless otherwise indicated.
  - 1. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
  - 2. For pointing mortar, provide sand with rounded edges.
  - 3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
- E. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.
- F. Water: Potable.

# 2.3 MANUFACTURED REPAIR MATERIALS

- A. Masonry Patching Compound: For use where it is not feasible to replace masonry units; Factorymixed cementitious product that is custom manufactured for patching masonry.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following, or approved equal:
    - a. Cathedral Stone Products, Inc.; Jahn M100 Terra Cotta and Brick Repair Mortar.
    - b. Conproco Corporation; Mimic or Matrix.
    - c. Edison Coatings, Inc.; Custom System 45.
  - 2. Use formulation that is vapor- and water permeable (equal to or more than the masonry unit), exhibits low shrinkage, has lower modulus of elasticity than the masonry units being repaired, and develops high bond strength to all types of masonry.
  - 3. Formulate patching compound used for patching brick in colors and textures to match each masonry unit being patched.

# 2.4 CLEANING MATERIALS

- A. Water: Potable.
- B. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following, or approved equal:
    - a. Diedrich Technologies Inc.; Diedrich 910PM Polished Marble Cleaner.
    - b. Dominion Restoration Products, Inc.; Bio-Cleanse.
    - c. Dumond Chemicals, Inc.; Safe n' Easy Architectural Cleaner/Restorer.
    - d. Price Research, Ltd.; Price Non-Acid Masonry Cleaner.
    - e. PROSOCO; Enviro Klean 2010 All Surface Cleaner.

## 2.5 ACCESSORY MATERIALS

- A. Anchors: Type and size indicated or, if not indicated, to match existing anchors in size and type. Fabricate anchors from Type 304 or Type 316 stainless steel.
- B. Setting Buttons: Resilient plastic buttons, nonstaining to masonry, sized to suit joint thicknesses and bed depths of masonry units without intruding into required depths of pointing materials.

## 2.6 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
  - 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
  - 1. Mortar Pigments: Where mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mortar Proportions: Mix mortar materials in the following proportions:
  - 1. Pointing Mortar for Brick: 1 part portland cement, 2 parts lime, and 6 parts sand or as otherwise recommended in writing by the approved testing agency as determined by their testing of existing brick and mortar.
    - a. Add mortar pigments to produce mortar colors required.
  - 2. Rebuilding (Setting) Mortar: Comply with ASTM C 270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime.

### 2.7 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows. Refer to Section 076200 "Sheet Metal Flashing and Trim" for additional requirements.
- B. Metal Base Flashing: Continuous metal base flashing for through-wall flashing assemblies. Minimum 3" width with foam bottom seal and adhesive top strip to secure through-wall flashing material.
  - 1. Hohmann & Barnard, Inc.; #DP-FTSA Drip Plate, or approved equal.
    - a. Stainless Steel: Type 304, 26 gauge.
    - b. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet. Provide 4" wide splice plates at joints of formed, smooth metal flashing.

- 2. Fabricate metal drip edges from stainless steel Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
- 3. Discontinue base flashing at locations of expansion joints.
- 4. Provide pre-manufactured, welded inside and outside corners and end dams to suit project conditions.
- C. Flexible Flashing: Use the following unless otherwise indicated:
  - 1. Copper-Laminated Flashing: Self-adhering, 7-oz./sq. ft. copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
    - a. Hohmann & Barnard, Inc.; Copper-Tuff SA#DP-FTSA Drip Plate, or approved equal.
    - b. Accessories: Provide primers and seaming materials produced by flashing manufacturer.
- D. Solder and Sealants for Sheet Metal Flashings:
  - 1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
  - 2. Elastomeric Sealant: ASTM C 920, chemically curing urethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and remain watertight.
- E. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.
- F. Termination Bars for Flexible Flashing: #304 stainless steel bars, 1/8 inch by 1 inch.
- G. Weeps: Cellular Plastic, one-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than depth of outer wythe, in color selected from manufacturer's standard.
  - 1. Hohmann & Barnard, Inc.; Quadro-Vent, or approved equal.
    - a. Spaced 24" o.c. for brick.

# PART 3 - EXECUTION

## 3.1 **PROTECTION**

- A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work.
- B. Comply with chemical-cleaner manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical-cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

- 1. Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. When no longer needed, promptly remove masking to prevent adhesive staining.
- 2. Keep wall wet below area being cleaned to prevent streaking from runoff.

## 3.2 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
  - 1. Replace header bricks to a depth of 3 5/8".
- B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- C. Provide shoring and structural support at temporary opening as required.
- D. Notify Architect in writing of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
  - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
  - 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
- F. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.
- G. Replace removed damaged brick with other removed brick in good quality, where possible, or with new brick matching existing brick, including size. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
  - 1. Maintain joint width for replacement units to match existing joints.
  - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- I. Lay replacement brick with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.). Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

- 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
- 2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry, and at same time as repointing of surrounding area.
- 3. When mortar is sufficiently hard to support units, remove shims and other devices interfering with pointing of joints.

# 3.3 MASONRY UNIT PATCHING

## A. Patching Bricks:

- 1. Remove loose material from masonry surface. Carefully remove additional material so patch will not have feathered edges but will have square or slightly undercut edges on area to be patched and will be at least 1/4 inch (6 mm) thick, but not less than recommended by patching compound manufacturer.
- 2. Mask adjacent mortar joint or rake out for repointing if patch will extend to edge of masonry unit.
- 3. Mix patching compound in individual batches to match each unit being patched.
- 4. Rinse surface to be patched and leave damp, but without standing water.
- 5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
- 6. Place patching compound in layers as recommended by patching compound manufacturer, but not less than 1/4 inch (6 mm) or more than 2 inches (50 mm) thick. Roughen surface of each layer to provide a key for next layer.
- 7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the masonry unit. Shape and finish surface before or after curing, as determined by testing, to best match existing masonry unit.
- 8. Keep each layer damp for 72 hours or until patching compound has set.

## 3.4 CLEANING MASONRY, GENERAL

- A. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water will not wash over cleaned, dry surfaces.
- B. Use only those cleaning methods indicated for each masonry material and location.
  - 1. Do not use wire brushes or brushes that are not resistant to chemical cleaner being used. Do not use plastic-bristle brushes if natural-fiber brushes will resist chemical cleaner being used.
  - 2. Use spray equipment that provides controlled application at volume and pressure indicated, measured at spray tip. Adjust pressure and volume to ensure that cleaning methods do not damage masonry.
    - a. Equip units with pressure gages.
  - 3. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with cone-shaped spray tip.

- 4. For water-spray application, use fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.
- 5. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F (60 and 71 deg C) at flow rates indicated.
- C. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.
- D. Water-Spray Application Method: Unless otherwise indicated, hold spray nozzle at least 6 inches (150 mm) from surface of masonry and apply water in horizontal back and forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- E. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces to comply with chemical-cleaner manufacturer's written instructions; use brush or spray application. Do not spray apply at pressures exceeding 50 psi (345 kPa). Do not allow chemicals to remain on surface for periods longer than those indicated or recommended by manufacturer.
- F. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
  - 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

## 3.5 PRELIMINARY CLEANING

- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing to dry as long as possible before removal. Remove loose soil and debris from open masonry joints to whatever depth they occur.
- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to cleaning methods being used. Extraneous substances include paint, calking, asphalt, and tar.

## 3.6 CLEANING MASONRY

- A. Mold, Mildew, and Algae Removal:
  - 1. Wet masonry with cold water applied by low-pressure spray.
  - 2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
  - 3. Scrub masonry with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that masonry surface remains wet.
  - 4. Rinse with cold water applied by low-pressure spray to remove mold, mildew, and algae remover and soil.

- 5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.
- B. Nonacidic Liquid Chemical Cleaning:
  - 1. Wet masonry with cold water applied by low-pressure spray.
  - 2. Apply cleaner to masonry in two applications by brush or low-pressure spray. Let cleaner remain on surface for period indicated below:
    - a. As recommended by chemical-cleaner manufacturer.
    - b. As established by mockup.
  - 3. Rinse with cold water applied by low-pressure spray to remove chemicals and soil.
  - 4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once.

## 3.7 REPOINTING MASONRY

- A. Rake out and repoint joints to the following extent:
  - 1. All joints within 24" of temporary opening.
  - 2. Joints indicated as sealant-filled joints.
- B. Notify Architect in writing of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- C. Pointing with Mortar:
  - 1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
  - 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch (9 mm) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
  - 3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 3/8 inch (9 mm). Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
  - 4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
  - 5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours including weekends and holidays.
    - a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.

- 6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.
- D. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

### 3.8 FLASHING, WEEP HOLES

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install cavity vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
  - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
  - 2. At multi-wythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.
  - 3. At masonry-veneer walls, extend flashing through veneer, across airspace behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under water-resistive barrier or air barrier, lapping at least 4 inches. Fasten upper edge of flexible flashing to sheathing through termination bar.
  - 4. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
  - 5. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
  - 6. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall, and adhere flexible flashing to top of metal drip edge.
- C. Install weep holes in exterior wythes and veneers in head joints of first course of masonry immediately above embedded flashing.
  - 1. Use specified weep/cavity vent products to form weep holes.
  - 2. Space weep holes 24 inches o.c. for brick, unless otherwise indicated.

# 3.9 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, spray applied at low pressure.
  - 1. Do not use metal scrapers or brushes.
  - 2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120

### SECTION 047200 - CAST STONE MASONRY

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Cast-stone trim may include the following:
    - a. Coping.
    - b. Wall caps.
- B. Related Sections:
  - 1. Section 079200 "Joint Sealants".

### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. For cast-stone units, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details for cast-stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces.
  - 1. Include building elevations showing layout of units and locations of joints and anchors.
- C. Samples for Initial Selection: For colored mortar and cast stone.
- D. Samples for Verification:
  - 1. For each color and texture of cast stone required, 10 inches square in size.
  - 2. For each trim shape required, 10 inches in length.
  - 3. For colored mortar, make Samples using same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.
  - 4. Make available for Architect's review at Project site.
  - 5. Make Samples from materials to be used for units used on Project immediately before beginning production of units for Project.
  - 6. Approved Samples may be installed in the Work.

## 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer.
- B. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C 1364, including test for resistance to freezing and thawing.
  - 1. Provide test reports based on testing within previous two years.

# 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer of cast-stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute or the Architectural Precast Association.
- B. Mockups: Furnish cast stone for installation in mockups specified in Section 042000 "Unit Masonry."
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery of cast stone to avoid delaying the Work and to minimize the need for on-site storage.
- B. Pack, handle, and ship cast-stone units in suitable packs or pallets.
  - 1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast-stone units if required, using dollies with wood supports.
  - 2. Store cast-stone units on wood skids or pallets with non-staining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store mortar aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

## 1.7 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.
  - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until cast stone has dried, but no fewer than seven days after completing cleaning.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.

### PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations for Cast Stone: Obtain cast-stone units from single source from single manufacturer.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

## 2.2 CAST-STONE MATERIALS

- A. General: Comply with ASTM C 1364.
- B. Cast Stone shall have a minimum compressive strength of 7,000 psi with an absorption rate of no greater than 5% when tested in accordance with this specification.
- C. Portland Cement: ASTM C 150, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C 114. Provide natural color or white cement as required to produce cast-stone color indicated.
- D. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C 33; gradation and colors as needed to produce required cast-stone textures and colors.
- E. Fine Aggregates: Natural sand or crushed stone complying with ASTM C 33, gradation and colors as needed to produce required cast-stone textures and colors.
- F. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- G. Admixtures: Use only admixtures specified or approved in writing by Architect.
  - 1. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
  - 2. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.
  - 3. Air-Entraining Admixture: ASTM C 260. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
  - 4. Water-Reducing Admixture: ASTM C 494, Type A.
  - 5. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.
  - 6. Water-Reducing, Accelerating Admixture: ASTM C 494, Type E.
- H. Reinforcement: Deformed steel bars complying with ASTM A 615, Grade 60. Use galvanized or epoxycoated reinforcement when covered with less than 1-1/2 inches of cast-stone material.

- 1. Epoxy Coating: ASTM A 775.
- 2. Galvanized Coating: ASTM A 767.
- I. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A 240, ASTM A 276, or ASTM A 666, Type 304.

### 2.3 CAST-STONE UNITS

- A. Continental Cast Stone. (Basis-of-Design)
- B. Cast-Stone Units: Comply with ASTM C 1364.
  - 1. Units shall be manufactured using the vibrant dry tamp or wet-cast method.
  - 2. Units shall be resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666, Procedure A, as modified by ASTM C 1364.
- C. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
  - 1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
  - 2. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
  - 3. Provide drips on projecting elements unless otherwise indicated.
- D. Fabrication Tolerances:
  - 1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
  - 2. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch, whichever is greater, but in no case by more than 1/4 inch.
  - 3. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch, whichever is greater.
  - 4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
- E. Cure Units as Follows:
  - 1. Cure units in enclosed, moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
  - 2. Keep units damp and continue curing to comply with one of the following:
    - a. No fewer than five days at mean daily temperature of 70 deg F or above.
    - b. No fewer than six days at mean daily temperature of 60 deg F or above.
    - c. No fewer than seven days at mean daily temperature of 50 deg F or above.
    - d. No fewer than eight days at mean daily temperature of 45 deg F or above.
- F. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
- G. Colors and Textures: As selected by Architect from manufacturer's full range.

- H. Colors and Textures: Provide units with fine-grained texture and buff color resembling sand-rubbed Indiana limestone.
- I. Colors and Textures: Provide units with fine texture and red-brown color resembling brownstone on adjacent buildings.

#### 2.4 MORTAR MATERIALS

A. Provide mortar materials that comply with Section 042000 "Unit Masonry."

### 2.5 ACCESSORIES

- A. Anchors: Type and size indicated, fabricated from Type 304 stainless steel complying with ASTM A 240, ASTM A 276, or ASTM A 666.
- B. Dowels: 1/2-inch diameter round bars, fabricated from Type 304 stainless steel complying with ASTM A 240, ASTM A 276, or ASTM A 666.
- C. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cast-stone manufacturer and expressly approved by cleaner manufacturer for use on cast stone and adjacent masonry materials.
- D. Provide all anchors and ties, straps, etc. required for masonry and cast stone work, as required and recommended by cast stone manufacturer.

#### 2.6 MORTAR MIXES

- A. Comply with requirements in Section 042000 "Unit Masonry" for mortar mixes.
- B. Comply with ASTM C 270, Proportion Specification.
  - 1. For setting mortar, use Type N.
  - 2. For pointing mortar, use Type N.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Contractor shall field measure and verify all dimensions and quantities for replacement installation prior to fabrication.

# 3.2 SETTING CAST STONE IN MORTAR

- A. Install cast-stone units to comply with requirements in Section 042000 "Unit Masonry."
- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
  - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
  - 2. Coordinate installation of cast stone with installation of flashing specified in other Sections.
- C. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- D. Set units in full bed of mortar with full head joints unless otherwise indicated.
  - 1. Set units with joints 1/4 to 3/8 inch wide, unless otherwise indicated.
  - 2. Build anchors and ties into mortar joints as units are set.
  - 3. Fill dowel holes and anchor slots with mortar.
  - 4. Fill collar joints solid as units are set.
  - 5. Build concealed flashing into mortar joints as units are set.
  - 6. Keep head joints in copings and between other units with exposed horizontal surfaces open to receive sealant.
  - 7. Keep joints at shelf angles open to receive sealant.
- E. Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- F. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- G. Tool exposed joints slightly concave when thumbprint hard. Use a smooth plastic jointer larger than joint thickness.
- H. Rake out joints for pointing with sealant to depths of not less than 3/4 inch. Scrub faces of units to remove excess mortar as joints are raked.
- I. Point joints with sealant to comply with applicable requirements in Section 079200 "Joint Sealants."
  - 1. Prime cast-stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
- J. Provide sealant joints at head joints of copings and other horizontal surfaces; at expansion, control, and pressure-relieving joints; and at locations indicated.
  - 1. Keep joints free of mortar and other rigid materials.
  - 2. Build in compressible foam-plastic joint fillers where indicated.
  - 3. Form joint of width indicated, but not less than 3/8 inch.

- 4. Prime cast-stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
- 5. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 079200 "Joint Sealants."

### 3.3 SETTING ANCHORED CAST STONE WITH SEALANT-FILLED JOINTS

- A. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
  - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
  - 2. Shim and adjust anchors, supports, and accessories to set cast stone in locations indicated with uniform joints.
- B. Keep cavities open where unfilled space is indicated between back of cast-stone units and backup wall; do not fill cavities with mortar or grout.
- C. Fill anchor holes with sealant.
  - 1. Where dowel holes occur at pressure-relieving joints, provide compressible material at ends of dowels.
- D. Set cast stone supported on clip or continuous angles on resilient setting shims. Use material of thickness required to maintain uniform joint widths. Hold shims back from face of cast stone a distance at least equal to width of joint.
- E. Keep joints free of mortar and other rigid materials. Remove temporary shims and spacers from joints after anchors and supports are secured in place and cast-stone units are anchored. Do not begin sealant installation until temporary shims and spacers are removed.
  - 1. Form open joint of width indicated, but not less than 3/8 inch.
- F. Prime cast-stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
- G. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 079200 "Joint Sealants."

## 3.4 INSTALLATION TOLERANCES

- A. Variation from Plumb: Do not exceed 1/8 inch in 10 feet maximum.
- B. Variation from Level: Do not exceed 1/8 inch in 10 feet maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.

D. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified.

## 3.5 ADJUSTING AND CLEANING

- A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
- B. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- C. Cast Stone shall show no obvious repairs or imperfections other than minimal color variations when viewed with the unaided eye under good typical lighting at a 20 ft. distance.
- D. In-Progress Cleaning: Clean cast stone as work progresses.
  - 1. Remove mortar fins and smears before tooling joints.
  - 2. Remove excess sealant immediately, including spills, smears, and spatter.
- E. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
  - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  - 2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
  - 3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
  - 4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
  - 5. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
  - 6. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION 047200

## SECTION 055010 - MISCELLANEOUS METALS

# PART 1 – GENERAL REQUIREMENTS

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 DESCRIPTION OF WORK

- A. Provide all plant, labor, materials, accessories, equipment and incidentals to complete Miscellaneous Metals work, as shown, specified, and as required, including, but not necessarily limited to, the following:
  - 1. Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not part of structural steel or other metal systems specified elsewhere shall be provided and installed by the General Contractor.
  - 2. Rough hardware shall be furnished by the Structural Steel Contractor and installed by the General Contractor.
  - 3. Loose bearing and leveling plates, loose steel lintels, plates, bars, angles, etc. shall be furnished by the Structural Steel Contractor and installed by the General Contractor
  - 4. Steel lintels, shelf angles, and relieving angles, with fixed, bolted or welded column connections required on at least one end, shall be furnished and installed by the Structural Steel Contractor.
  - 5. Miscellaneous framing and supports to support other work including suspended operable partitions, coiling doors, elevator machine beam, mechanical and electrical equipment and other applications where framing and supports are not specified in other sections provided and installed by the Structural Steel Contractor.
  - 6. Steel framed stairs, landings, platforms, treads, risers, stair guardrail systems, posts and brackets, metal pan stairs, landings and platforms for concrete fill, Steel stairs, landings, platforms, canopies and guardrails provided and installed by the Structural Steel Contractor.
  - 7. Ladders for roofs transitions, roof hatch access, elevator pit ladder, ladder safety cages, etc provided and installed by the General Contractor.
  - 8. Downspout Boots, Pipe Bollards, Roof Railing and Stair Nosings for exposed poured concrete stairs provided and installed by the General Contractor.
  - 9. Miscellaneous fabrications as noted and/or required to properly complete the project.

#### B. Related work specified elsewhere:

1.	Concrete Work	Division 03
2.	Unit Masonry	Division 04
3.	Structural Steel	Division 05
4.	Metal Decking	Division 05
5.	Cold-Formed Metal Framing	Division 05

6.	Expansion Control	Division 07
7.	Roof Accessories	Division 07
8.	Hollow Metal Doors and Frames	Division 08
9.	Aluminum Entrances and Storefronts	Division 08
10.	Finish Hardware	Division 08
11.	Gypsum Board Assemblies	Division 09
12.	Painting	Division 09
13.	Toilet Accessories	Division 10

# 1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with the provisions of the following, except as other-wise indicated:
  - 1. IBC International Building Code 2009
  - 2. AISC "Manual of Steel Construction".
  - 3. NAAMM "Metal Stairs Manual"
  - 4. NAAMM "Pipe Railing Manual"
  - 5. NAAMM "Metal Handrail and Railing Manual"
  - 6. NAAMM "Metal Bar Grating Manual".
  - 7. ANSI A12.1 "Floor and Wall Opening, Railings and Toeboards"
  - 8. ANSI A14.3 "Safety Requirements for Fixed Ladders"
  - 9. ASME A17.1 "Safety Code for Elevators and Escalators"
  - 10. AWS Structural Welding Codes
- B. Qualifications for welding work: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".
  - 1. If re-certification of welders is required, retesting will be Contractors responsibility.
- C. Welding: Use qualified welders and comply with American Welding Society (AWS) DI.1, "Structural Welding Code Steel", (AWS) DI.3, "Structural Welding Code Sheet Steel".
- D. Fire-Rated Assemblies: Where framing units are components of assemblies indicated for a fireresistance rating, including those required for compliance with governing regulations, provide units that have been approved by governing authorities that have jurisdiction.
- E. Take field measurements prior to preparation of shop drawings and fabrication, where possible, to insure proper fitting of the work, however, do not delay job progress; allow for trimming and fitting of miscellaneous steel wherever the taking of field measurements before fabrication might delay the work.
- F. Preassemble miscellaneous metal items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the project site. Disassemble units only to the extent necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.
- G. Be responsible for interface coordination between work provided and related work of other trades and contracts.

H. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications, anchor details, installation and application instructions for metal products, fabrications, accessories and primer paint used in miscellaneous metal fabrications, including paint products and grout.
- B. Shop Drawings: Submit shop drawings showing complete details and schedules for fabrication and erection. Include plans, elevations, details of sections, connections, anchorage, accessory items and material properties. Provide templates and setting drawings. Provide signed and sealed engineered calculations by a Professional Engineer licensed in the State of Pennsylvania for materials and fabrications required to comply with design loads. Indicate all adjacent work to which the fabrications are attached or with which components must interface.
- C. Samples: Submit two sets of representatives' samples of materials and finished products as may be requested by the Architect.

### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site at such intervals to insure uninterrupted progress of the work.
- B. Store materials to permit easy access for inspection and identification. Keep metals inside a wellventilated area off the ground, using pallets, platforms, or other supports. Protect metal members and packaged materials from corrosion and deterioration.

#### 1.6 **PROJECT CONDITIONS**

- A. Field Measurements: Where miscellaneous metal work is indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating miscellaneous metal work without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.

## PART 2 - PRODUCTS

# 2.1 MATERIALS

A. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, stains, discoloration, rolled trade names, roughness and other imperfections.

- B. Steel Plates, Shapes and Bars: ASTM A36/A36M.
- C. Steel Bar Grating: ASTM A569 or ASTM A36.
- D. Steel Tubing: Cold formed, ASTM A500; or hot rolled, ASTM A501.
- E. Structural Steel Sheet: Hot rolled, ASTM A570; or cold rolled, ASTM A611, Class 1, of grade required for design loading, unless otherwise indicated.
- F. Galvanized Structural Steel Sheet: ASTM A446, of grade required for design loading. Coating designation as indicated, or it not indicated, G90.
- G. Steel Pipe: ASTM A53, Type and grade (if applicable) as selected by Fabricator and as required for design loading stainless steel, black iron or galvanized as indicated; standard weight (Schedule 40), unless otherwise indicated, or another weight as required by structural loads.
- H. Grey Iron Castings: ASTM A48, Class 30, unless another class is indicated or required by structural loads.
- I. Malleable Iron Castings: ASTM A47/A47M, grade as selected by fabricator.
- J. Stainless Steel: Comply with standards for forms and types of stainless steel work required as follows:
  - 1. Type: ANSI Type 304, unless otherwise indicated.
  - 2. Plate: ASTM A 167.
- K. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- L. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot-dip galvanized, ASTM A 153.
- M. Cast-In Place and Post-installed Anchors: Anchors of type indicated and as required, fabricated from corrosion-resistant materials, capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified, independent testing agency.
- N. Grout:
  - 1. Metallic Non-Shrink Grout: Pre-mixed, factory-packaged, ferrous aggregate grout in accordance with CE CRD-C588, Type M and ASTM C 1107. Provide grout specifically recommended by manufacturer for heavy-duty loading applications.
- O. Fasteners:
  - 1. General: Provide zinc-coated fasteners for exterior or where built into exterior walls. Select fasteners for the type, grade and class required.

- 2. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563/A 563M; and where indicated, flat washers.
- 3. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).
- 4. Wood Screws: Flat head carbon steel, ASME B18.6.1.
- 5. Anchor Bolts: ASTM F1554, Grade 36.
- 6. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- 7. Plain Washers: Round, carbon steel, ASME B18.22.1 (ASME B18.22M).
- 8. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1 (ASME B18.22.2M).
- 9. Toggle Bolts: Tumble-wing type, class and style as needed, FS FF-B-588.
- 10. Masonry Anchorage Devices: Expansion shields FS FF-S-325.
- P. Welding Rods and Bare Electrodes and Filler Material: Provide type and alloy of filler metal and electrodes according to AWS specifications for metal alloy welded and as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- Q. Materials for Miscellaneous Steel: For the fabrication of miscellaneous metal work items which will be exposed to view, use only materials which are smooth and free of surface blemishes, including pitting, seam marks, roller marks, rolled trade names, and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.
- R. Paint:
  - 1. Primer selected to be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Section 099000.
  - 2. Shop Primer for Ferrous Metal: Organic zinc-rich primer, complying with SSPC-Paint 20 and compatible with topcoat.
  - 3. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.

## 2.2 FABRICATION

- A. Workmanship: Use of materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components or work.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- C. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-heat

(countersunk) screws or bolts. Use fasteners of same basic metal as fastened metal unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.

- E. Provide for anchorage of type indicated and as required, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
- F. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive hardware and similar items.
- G. Fabricate joints that will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
- H. Electrodes for Welding: Comply with AWS Code and as recommended by product manufacturer.
- I. Rough Hardware: Furnish bent or otherwise custom fabricated bolts, plates, inserts, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing, supporting, anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 Sections.
- J. Fabricate items to sizes, and shapes and dimensions required. Furnish malleable-iron washers for heads and nuts that bear on wood structural connections; elsewhere, furnish steel washers.
- K. Shelf Angles: Furnish and install structural steel shelf angles of sizes indicated and required for attachments to concrete framing. Provide slotted holes to receive 3/4" bolts, spaces not more than 6" from ends and not more than 24" o.c. unless otherwise indicated.
- L. Loose Bearing and Leveling Plates: Furnish and install loose bearing and leveling plates for steel items bearing on masonry or concrete constructions, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting required. Galvanize after fabrication.
- M. Loose Steel Lintels: Furnish and install loose structural steel lintels for openings and recesses in masonry walls and partitions whether they are indicated in the lintel schedule or not. Weld adjoining members together to form a single unit where indicated. Provide not less than 8" bearing at each side of openings, unless otherwise indicated.
- N. Miscellaneous Steel Framing and Supports: Furnish and install miscellaneous steel framing and supports which are not part of structural steel framework, as required to complete work.
- O. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise indicated, fabricate from structural steel shapes and plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
- P. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.
- Q. Except as otherwise shown, space anchors 24" o.c. and provide minimum anchor units of 1-1/4" x 1/4" x 8" steel straps.

- R. Galvanize all exterior miscellaneous frames, supports and trim. All interior miscellaneous frames, supports and trim at wet and high humidity areas and as otherwise indicated.
- S. Galvanizing:
  - 1. Provide a zinc coating for those items indicated or specified to galvanized, as follows: Unit noted to be galvanized are to be hot dipped galvanized after fabrication.
    - a. ASTM A 153 for galvanizing iron and steel hardware.
    - b. ASTM A 123 for galvanizing rolled, pressed, and forged steel shapes, plates, bars, and strip 1/8" thick and heavier.
    - c. ASTM A 386 for galvanizing assembled steel products.
- T. Miscellaneous Steel Trim: Provide shapes and sizes for profiles indicated. Except as otherwise indicated, fabricate units from structural steel shapes and plates and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation with other work.

### 2.3 COATINGS AND PRIMER PAINTS

- A. Shop paint miscellaneous metal work, except members or portions of members to be embedded in concrete, masonry and surfaces and edges to be field welded, galvanized or finished metal surfaces unless otherwise indicated.
- B. Remove scale, rust and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-2 (Hand Tool Cleaning), SSPC SP-3 (Power Tool Cleaning) or SSPC SP-6 (Commercial Blast Cleaning). Omit blast cleaning for interior work.
- C. Remove oil, grease and similar contaminants in accordance with SSPC SP-1 (Solvent Cleaning).
- D. Interior Ferrous Items: Manufacturer's standard, fast curing, lead free, universal primer, selected for resistance to normal atmospheric corrosion, for compatibility with proposed finish paint systems and for capability to provide a sound foundation for field applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645. Use painting methods that will result in full coverage of joints, corners, edges and all exposed surfaces.
- E. Apply one shop coat to fabricated metal items, except apply 2 coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.
- F. Exterior Steel Items: Hot dipped galvanized to receive finish coats; ASTM A 153, A123, and A386, unless otherwise noted.
- G. Galvanized coating repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A 780. SSPC P-20 or Mil-P-21D3T.

### PART 3 - EXECUTION

#### 3.1 INSPECTION

A. Installer must examine the areas and conditions under which work is to be installed and notify the General Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the erector.

### 3.2 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

### 3.3 INSTALLATION

- A. Install miscellaneous metals in accordance with referenced standards and as shown on final approved shop drawings.
- B. Install manufactured products in conformance with manufacturer's recommendations.
- C. Fastening to In-Place Construction:
  - 1. Except as otherwise specified, provide anchorage devices and fasteners where necessary for securing metal fabrication items to in place construction including threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, and other connectors as required.
- D. Cutting, Fitting and Placement:
  - 1. Perform cutting, drilling and fitting required for the installation of the miscellaneous metal items. Set the work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in form work for items which are to be built into concrete, masonry or similar construction.
  - 2. Fit exposed connections accurately together to form tight hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of units and components which are zinc coated, shop prime painted, or finish after fabrication or are intended for mechanical field connections or other means without further cutting or fitting.
- E. Field Welding:
  - 1. Comply with AWS Code for the procedures of manual shielded metal arc welding, the appearance and quality for welds made, and the methods used in correcting welding

work. Use materials and methods that minimize distortion, develop strength, and corrosion resistance to base metals without undercut or overlap. Finish surfaces shall be left smooth and match contours of adjoining surfaces.

- F. Setting Loose Plates:
  - 1. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
  - 2. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated.
  - 3. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

### 3.4 ADJUSTING, CLEANING AND PROTECTION

- A. Immediately after erection of steel items, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. For galvanized surfaces: Clean field welds, bolted connections and abraded areas and apply 2 coats of galvanizing repair paint.
- C. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 055010

# SECTION 062013 - EXTERIOR FINISH CARPENTRY

# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Exterior [wood] [medium-density overlay (MDO)] [primed hardboard] [cellular PVC] [and] [foam plastic] trim.
  - 2. [Lumber] [Plywood] [Hardboard] siding.
  - 3. [Plywood] [Hardboard] soffits.
  - 4. Exterior [stairs] [and] [railings].
  - 5. Exterior ornamental wood columns.
- B. Related Requirements:
  - 1. Section 061000 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view[ and for framing exposed to view].
  - 2. Section 061063 "Exterior Rough Carpentry" for elevated decks including stairs and railings.
  - 3. Section 064013 "Exterior Architectural Woodwork" for [shop-fabricated exterior woodwork] [exterior woodwork not specified in this Section].

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
  - 2. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
  - 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.
  - 4. Include copies of warranties from chemical-treatment manufacturers for each type of treatment.
- B. LEED Submittals:

- 1. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regional materials, certificates indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating distance to Project, cost for each regional material, and fraction by weight that is considered regional.
- 2. Certificates for [Credit MR 6] [Credit MR 7]: Chain-of-custody certificates indicating that products specified to be made from certified wood comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.
- C. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.
- D. Samples for Verification:
  - 1. For each species and cut of lumber and panel products, with 1/2 of exposed surface finished; 50 sq. in. (300 sq. cm) for lumber and 8 by 10 inches (200 by 250 mm) for panels.
  - 2. For hardboard siding, 50 sq. in. (300 sq. cm) for board types and 8 by 10 inches (200 by 250 mm) for panels.
  - 3. For cellular PVC trim, with 1/2 of exposed surface finished; 50 sq. in. (300 sq. cm).
  - 4. For foam plastic moldings, with 1/2 of exposed surface finished; 50 sq. in. (300 sq. cm).
  - 5. For exterior wood columns, include[ quarter-section] Samples of cap, base, and plinth; and 6-inch- (150-mm-) long[ quarter-section] Sample of shaft.[ Samples need not be same diameter as required columns.]

## 1.4 INFORMATIONAL SUBMITTALS

- A. Compliance Certificates:
  - 1. For lumber that is not marked with grade stamp.
  - 2. For preservative-treated wood that is not marked with treatment-quality mark.
  - 3. For fire-retardant-treated wood that is not marked with classification marking of testing and inspecting agency.
- B. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated wood.
  - 2. Fire-retardant-treated wood.
  - 3. Cellular PVC trim.
  - 4. Foam plastic moldings.
- C. Sample Warranties: For manufacturer's warranties.

# 1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fireretardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## 1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
  - 1. For exterior ornamental wood columns, comply with manufacturer's written instructions and warranty requirements.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## 1.8 WARRANTY

- A. Manufacturer's Warranty for Cellular PVC Trim: Manufacturer agrees to repair or replace trim that fails due to defects in manufacturing within specified warranty period. Failures include, but are not limited to, deterioration, delamination, and excessive swelling from moisture.
  - 1. Warranty Period: [25] < Insert number> years from date of Substantial Completion.
- B. Manufacturer's Warranty for Hardboard Siding[ and Trim]: Manufacturer agrees to repair or replace siding that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to, deformation or deterioration beyond normal weathering.
  - 1. Warranty Period for Factory-Applied Finish: [Five] <Insert number> years from date of Substantial Completion.
  - 2. Warranty Period for Siding[ and Trim] (Excluding Finish): [25] <Insert number> years from date of Substantial Completion.
- C. Manufacturer's Warranty for Columns: Manufacturer agrees to repair or replace columns that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period for Columns: [Five] <Insert number> years from date of Substantial Completion.

# PART 2 - PRODUCTS

# 2.1 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Water-Repellent Preservative Treatment by Nonpressure Process: AWPA N1; dip, spray, flood, or vacuum-pressure treatment.
  - 1. Preservative Chemicals: 3-iodo-2-propynyl butyl carbamate (IPBC), combined with an insecticide containing chloropyrifos (CPF).
  - 2. Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.
  - 3. Application: For installation as replacement sleeper base for existing bleacher assemblies in multiple locations.
- B. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC3b.
  - 1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent respectively.
  - 2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
  - 3. Do not use material that is warped or does not comply with requirements for untreated material.
  - 4. Mark lumber with treatment-quality mark of an inspection agency approved by the American Lumber Standard Committee's Board of Review.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

## 3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
  - 1. Do not use manufactured units with defective surfaces, sizes, or patterns.
- B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
  - 1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
  - 2. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.
  - 3. Install stairs with no more than 3/16-inch (4.7-mm) variation between adjacent treads and risers and with no more than 3/8-inch (9.5-mm) variation between largest and smallest treads and risers within each flight.
  - 4. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

## 3.4 ADJUSTING

A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

## 3.5 CLEANING

A. Clean exterior finish carpentry on exposed and semiexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

#### 3.6 **PROTECTION**

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## END OF SECTION 062013

## SECTION 066400 - PLASTIC PANELING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Plastic sheet paneling.
  - 2. Factory-laminated plastic sheet paneling.
- B. Related Requirements:
  - 1. Section 061000 "Rough Carpentry" for wood furring for installing plastic paneling.
  - 2. Section 064219 "Plastic-Laminate-Faced Wood Paneling."
  - 3. Section 102600 "Wall and Door Protection" for corner guards installed over plastic paneling.

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For plastic paneling and trim accessories, in manufacturer's standard sizes.

## 1.4 QUALITY ASSURANCE

A. Testing Agency: FM Approvals.

#### 1.5 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install plastic paneling until spaces are enclosed and weathertight and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. Source Limitations: Obtain plastic paneling and trim accessories from single manufacturer.

# 2.2 PLASTIC SHEET PANELING

- A. Glass-Fiber-Reinforced Plastic Paneling: Gelcoat-finished, glass-fiber-reinforced plastic panels complying with ASTM D5319.
- B. Basis of Design Product:
  - 1. Resolite FRP Panel CRFS25A '30' Series
  - 2. Or approved equal.
  - 3. Surface-Burning Characteristics: As follows when tested by a qualified testing agency according to ASTM E84. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.
  - 4. Nominal Thickness: Not less than 0.09 inch (2.3 mm)
  - 5. Surface Finish: Smooth
  - 6. Color: To match existing

## 2.3 ACCESSORIES

- A. Trim Accessories: Provide division bars, inside corners, outside corners, and caps as needed to conceal edges.
  - 1. Color: As selected by Architect from manufacturer's full range.
- B. Exposed Fasteners: Fasteners shall be stainless steel Type 300 series installed to comply with the maximum load and span requirements. #14 fasteners shall be used to attach panels to supports and SB2 grommet type fasteners shall be used to secure panel sidelaps and flashing / trim.
- C. Concealed Mounting Splines: Continuous, H-shaped aluminum extrusions designed to fit into grooves routed in edges of factory-laminated panels and to be fastened to substrate.
- D. Adhesive: As recommended by plastic paneling manufacturer.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

# 3.2 PREPARATION

- A. Condition panels by unpacking and placing in installation space before installation according to manufacturer's written recommendations.
- B. Lay out paneling before installing. Locate panel joints to provide equal panels at ends of walls not less than half the width of full panels.

# 3.3 INSTALLATION

- A. Install plastic paneling according to manufacturer's written instructions.
- B. Install panels with fasteners. Layout fastener locations and mark on face of panels so that fasteners are accurately aligned.
  - 1. Drill oversized fastener holes in panels and center fasteners in holes.

END OF SECTION 066400
## SECTION 079200 - JOINT SEALANTS

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. This Section includes joint sealants for the following applications:
  - 1. Exterior joints in the following vertical surfaces and horizontal non-traffic surfaces:
    - a. Control and expansion joints.
    - b. Fastener penetrations at masonry locations.
    - c. Other joints as indicated.
- B. Exterior control and expansion joints in cast stone masonry, concrete pavements and curbs.
- C. Exterior and interior control and expansion joints in masonry.
- D. Exterior building, wall and sitework joints, including (but not limited to) concrete to concrete, concrete to masonry, masonry to masonry to metal, masonry to plaster, plaster to plaster, under saddles and thresholds and miscellaneous openings. Include running and bed joints in all sills. Metal shall be understood to include (but not limited to) door, window, louver and other metal frames.
- E. All interior joints where plaster, drywall and the like terminates at dissimilar materials or assemblies where an open joint exists.
- F. Exterior joints as shown and/or required.

### 1.3 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

# 1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

## 1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

### 1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by jointsealant manufacturer or are below 40 deg F (5 deg C).
  - 2. When joint substrates are wet.
  - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  - 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

### 1.1 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
  - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
  - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
  - 3. Mechanical damage caused by individuals, tools, or other outside agents.

# PART 2 - PRODUCTS

# 2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles or approved equal.

# 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  - 1. Architectural Sealants: 250 g/L.
  - 2. Nonmembrane Roof Sealants: 300 g/L.
  - 3. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 4. Sealant Primers for Porous Substrates: 775 g/L.
  - 5. Modified Bituminous Sealant Primers: 500 g/L.
- C. Colors of Exposed Joint Sealants: For each locations and adjoining materials, color as selected by Architect from manufacturer's full range.

# 2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquidapplied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids. Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component, Mildew-Resistant, Neutral-Curing, Silicone Sealant for use at plumbing fixtures:
  - 1. Available Products or approved equal:
    - a. Pecora Corporation; 898 VOC 12 g/L.
    - b. Sonneborn, Div of BASF; Omniplus, VOC 0 g/L.
    - c. Tremco; Spectrem, VOC 8 g/L.
  - 2. ASTM C920, Type and Grade: S (single component) and NS (nonsag).
  - 3. Class: 25/50.
  - 4. Use Related to Exposure: NT (non-traffic).

- F. Multi-Component, Non-sag, Polyurethane Sealant for exterior joints:
  - 1. Available Products:
    - a. Pecora Corporation; Dynatrol II, VOC 14 g/L.
    - b. Sonneborn, Div of BASF; 150, VOC 28 g/L.
    - c. Tremco; Dymeric 240/240 FC, VOC 35/5 g/L.
  - 2. ASTM C920, Type and Grade: M (multicomponent) and NS (non-sag).
  - 3. Class: 50.
  - 4. Use Related to Exposure: NT (non-traffic), M, A, G and O.
- G. Multi-Component, Self Leveling, Polyurethane Sealant: Use in Joints subject to traffic and for Radon abatement sealing of concrete slabs and concrete slab to block walls.
  - 1. Available Products:
    - a. Pecora Corporation; Urexpan NR-200, VOC 0 g/L.
    - b. Sonneborn, Div of BASF; Sonolastic SL-2, VOC 0 g/L.
    - c. Tremco; THC 900/THC901, VOC 90/105 g/L.
  - 2. ASTM C920, Type and Grade: M (multicomponent) and P (pourable).
  - 3. Class: 25.
  - 4. Use Related to Exposure: SL, Traffic Grade
- H. Single-Component, Non-sag, Silicone Sealant for interior fire rated applications in accordance with appropriate UL Design Systems:
  - 1. Available Products:
    - a. Pecora Corporation; 864, VOC 12 g/L.
    - b. Sonneborn, Div of BASF; Omniseal 50, VOC 35 g/L.
    - c. Tremco; Spectrem 4TS, VOC 18 g/L.
  - 2. ASTM C920, Type and Grade: S (multicomponent) and NS (non-sag).
  - 3. Class: 50.
  - 4. Use Related to Exposure: NT (non-traffic), Fire Rated Systems.

# 2.4 LATEX JOINT SEALANTS

- A. Single-Component, Non-Sag, Acrylic Latex Sealant for interior and acoustical joints: Comply with ASTM C 834, Type P, Grade NF.
  - 1. Available Products:
    - a. Pecora Corporation; AC-20+, VOC 31 g/L.
    - b. Sonneborn, Div of BASF; Sonolac, VOC 41 g/L.
    - c. Tremco; Tremflex 834, VOC 11 g/L.
  - 2. ASTM C 834, Type and Grade: Type P, Grade NF.
  - 3. Class: 7.5/7.5

4. Use Related to Exposure: General Purpose interior and exterior with slight to moderate movement.

# 2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type B (Cylindrical flexible sealant backer rod with bi-cellular material with non-absorbing outer skin), non-gassing, non-exuding, chemically inert, non-absorbing, for cold applied sealants and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

# 2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests and complying with VOC limits indicated.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

# PART 3 - EXECUTION

# 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

# 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

# 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

- 1. Place sealants so they directly contact and fully wet joint substrates.
- 2. Completely fill recesses in each joint configuration.
- 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 2. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

### 3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

# 3.5 **PROTECTION**

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

# SECTION 131260 - VISITOR GRANDSTAND SEATING SYSTEM

# PART 1 GENERAL INFORMATION

1.01 <u>Scope of Work</u> Furnish elevated bleacher equivalent to the Alum-A-Stand as manufactured by Dant Clayton Corporation, Louisville, KY, or approved equal.

# 1.02 Related Work

- 1. Earthwork
- 2. Concrete

# 1.03 <u>Submittals</u>

A. Submit the following samples:

- 1. Seat board
- 2. Footboard with slip and stain resistant finish
- 3. Riser board
- B. Design shop drawings prepared by an engineer licensed in the State of New Jersey.
- C. Fully dimensioned drawings shall indicate aisles, walkways, seating sections and exits as well as concrete foundation pad w/ reinforcing and subgrade installation.
- D. End elevation indicating riser and row depth, deck configuration, railings, size of framing members.

# 1.04 <u>Design Criteria</u>

- A. All material and workmanship shall be in accordance with the following: AISC Manual, 8<sup>th</sup> Edition ACI Building Code for Reinforced Concrete Aluminum Association of America New Jersey State Building Code
- B. Design Loads: Dead Load 6 psf seat and footboards risers, etc. Live Load 120 psf to structural member 120 plf seatboards 120 plf footboards (individually) Design Wind Speed 75 mph on projected vertical surface parallel per ft. of seat parallel to seat run Sway 24 plf 10 plf perpendicular per foot of seat Guardrail Loads 50 plf distributed or 200 lb concentrated load applied in any direction
- C. Understructure Criteria:

The following criteria is used to establish a minimum requirement for strength, stiffness, and rigidity of the understructure components.

Moment of inertia of .822

Section modulas of	.576
Radius of gyration of	.975
Axial loading of	.889

D. Code Compliance: Submittals shall be based on specifications contained in the bid documents or the latest code edition adopted at the time of bidding.

# 1.05 Quality Assurance

- A. Manufacturer: Company specializing in spectator seating with a minimum of 10 years experience in manufacturing bleacher seating.
- B. Engineer Qualifications: The bleacher shall be designed and stamped by a professional engineer registered in the State of New Jersey.
- C. Warranty: Product shall be guaranteed for five (5) years on the structure and three (3) years on the finish together with labor. Damage resulting from abnormal use, vandalism, or incorrect installation (if done by other than authorized installer of the manufacturer) is not applicable. Any exposed mill finish aluminum surface will become discolored due to oxidation which is a natural phenomenon.

# PART 2 PRODUCTS

- 2.01 Basis of Design Manufacturer
  - The basis of design manufacturer for seating is Dant Clayton Corporation, 1500 Bernheim Lane, Louisville, KY 40210, 800-626-2177, or approved equal. Subject to compliance with all specified requirements, products shall be provided by either the basis of design manufacturer, or another approved manufacturer. Being listed as an approved manufacturer does not remove the requirements to comply with any portion of the drawings or specifications regardless of what is deemed a manufacturer's standard product.

# 2.02 <u>Materials</u>

A. Understructure:

- 1. Understructure shall be fabricated from 6061-T6 alloy aluminum extrusions.
- 2. Vertical members shall be 2 7/8" o.d. tubing or minimum L3.5x3.5x1/4 angles.
- 3. Horizontal members and footboard supports shall be 3" x 2 7/8" channel or minimum L2.5xL2.5x3/16 angles.
- 4. Cross braces and diagonals shall be  $2\frac{1}{4}$  x 7/8" channel or 2"x2" angle.
- 5. Handrail support shall be 2 5/8" o.d. tubing.
- 6. The understructure shall be assembled from the above items in an interlocking design and 7/16" x 3  $\frac{1}{2}$ " hot-dipped galvanized bolts.
- 7. The structure shall be designed so that in the event of accidental damage, the sub-component parts may be replaced using common hand tools. Field welding for repair purposes shall not be considered.
- 8. Primary structural members shall be bolted together, or calculations must be submitted verifying that the structure has taken into account the weakening of aluminum associated with welding per AA ADMI

- B. Guardrail Systems:
  - 1. Guardrails shall be of anodized aluminum extruded channel, 3 x 2 7/8", 6061-T6 alloy, anodized to clear 204R1.
  - 2. The guardrail system shall be of interlocking design with positive through bolt fastening. The top rail shall be designed to fully cover the rail support posts for a totally snag-free area and eliminate the potential of sharp edge contact with the spectators.
  - 3. Grabrails shall be extruded aluminum pipe of 6063-T6 alloy, 1 15/16" o.d.
  - 4. Chain link fence shall be 2" mesh, 6 gauge vinyl coated fabric
- C. Hand and Grab Rails
  - 1. Hand and Grab Rails shall be located in all areas required by building code.
  - 2. Hand and Grab Rails shall be 1 15/16" O.D. extruded aluminum pipe.
  - 3. Two-Line mid-aisle handrails shall be located in all interior aisles. All mid-aisle rails shall feature internal fittings for both lines of rail. External fittings are not permitted.
- D. Extrusions
  - Seats shall be 6063-T6 extruded aluminum with a fluted surface and a wall thickness of .078". Seatboards shall be a minimum of 9½" wide actual, with outside legs of 1 ¾" actual vertical height, and shall have two internal legs with a vertical height of 2 5/8". Seatboards shall attach with one 3/8" diameter bolt and shall be designed for positive physical fastening. Bolt clips, bolt runners or other friction type fastening devices are not acceptable. Seats shall be pre-treated and clear anodized.
  - 2. Footboards shall be 6063-T6 extruded aluminum with a fluted surface and a wall thickness of .078". Each footboard member (individually) shall have two internal legs with 2 1/8" actual vertical height. All footboards shall attach without the use of hardware. Attachment shall be positive snap and interlock with the support structure. Use of bolt clips, bolt runners, or other friction type fastening devices are not acceptable.
  - 3. Riserboards shall be 6063-T6 extruded aluminum and shall be pretreated and powder coated in color selected by architect from manufacturers standard color options.
- E. Walking Surface Requirement
  - Enhanced Slip and Stain Resistant Finish
  - 1. All aluminum footboards shall have an enhanced stain resistant and slip resistant finish at all locations intended for use as a walking surface.
    - a. This finish shall be produced by the bleacher manufacturer in addition to the mill extrusion process and shall be uniform in appearance. The slip and stain resistant surface treatment must be achieved with a blasted and anodized process or a textured thermo bonded process. The metallic media blasting option must be performed in a controlled factory environment to ensure consistency. Hand processes or sand blasting is strictly prohibited as they produce an inconsistent finish that is not uniform in appearance or performance.

- b. This surface finish shall prevent oxidation staining and be resistant to staining from beverage spills and organic matter. Oxidation staining prior to warranty expiration shall be grounds for product replacement at the manufacturer's expense.
- c. This surface finish shall exhibit enhanced slip resistance beyond the mill extrusion process, resulting in an improved coefficient of friction under wet conditions in all directions of travel.
- d. Untreated mill finish aluminum with raised extruded "flutes" or "ribs" does not meet this requirement.
- F. Aisles:

Aisles shall be designed so that all vertical and horizontal areas within the 6' bay of the aisles area shall be fully closed.

- G. Hardware:
  - i. Bolts used for field installation shall be hot dipped galvanized.
  - ii. Primary connections, i.e. seat, crossbrace, handrail (rail and posts) shall be made with minimum of 3/8" diameter hardware.
  - iii. End Caps All end caps (seatboard, footboard and handrail) shall be cast aluminum.

# PART 3 EXECUTION

- 3.01 <u>Installation</u>
  - A. Installation: Shall be handled directly by the manufacturer or by a factory certified installation subcontractor.
  - B. Erect per plans, shop drawings and specifications.
- 3.02 <u>Cleaning</u>
  - A. Clean all surfaces according to manufacturer's recommendations.
  - B. Remove all packaging and construction debris.

END OF SECTION

#### SECTION 311000 - SITE CLEARING

### PART 1 GENERAL

### 1. RELATED DOCUMENTS

a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 2. SUMMARY

- a. Section Includes:
  - 1) Protecting existing vegetation to remain.
  - 2) Removing existing vegetation.
  - 3) Clearing and grubbing.
  - 4) Stripping and stockpiling topsoil.
  - 5) Stripping and stockpiling rock.
  - 6) Removing above- and below-grade site improvements.
  - 7) Disconnecting, capping or sealing, and removing site utilities or abandoning site utilities in place as shown on contract documents.
  - 8) Temporary erosion and sedimentation control.
- b. Related Requirements:
  - 1) Section 015000 "Temporary Facilities and Controls" for temporary erosion- and sedimentation-control measures.

#### 3. **DEFINITIONS**

- a. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- b. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- c. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing inplace surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches in diameter; and free of weeds, roots, toxic materials, or other non-soil materials.
- d. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- e. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

### 4. PREINSTALLATION MEETINGS

a. Pre-installation Conference: Conduct conference at project site

### 5. MATERIAL OWNERSHIP

a. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

### 6. INFORMATIONAL SUBMITTALS

- a. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1) Use sufficiently detailed photographs or video recordings.
  - 2) Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- b. Topsoil stripping and stockpiling program.
- c. Rock stockpiling program.
- d. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.
- e. Burning: Documentation of compliance with burning requirements and permitting of authorities having jurisdiction. Identify location(s) and conditions under which burning will be performed.

#### 7. QUALITY ASSURANCE

- a. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.
- b. Rock Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.

# 8. FIELD CONDITIONS

- a. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1) Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

- 2) Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- b. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1) Do not proceed with work on adjoining property until directed by Engineer.
- c. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises.
- d. Utility Locator Service: Notify One Call for area where Project is located before site clearing.
- e. Do not commence site clearing operations until temporary erosion- and sedimentationcontrol and plant-protection measures are in place.
- f. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

#### PART 2 PRODUCTS

### 1. MATERIALS

- a. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
  - 1) Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

#### PART 3 EXECUTION

#### 1. PREPARATION

- a. Protect and maintain benchmarks and survey control points from disturbance during construction.
- b. Protect existing site improvements to remain from damage during construction.
  - 1) Restore damaged improvements to their original condition, as acceptable to Owner.

#### 2. TEMPORARY EROSION AND SEDIMENTATION CONTROL

- a. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- b. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

- c. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- d. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

#### 3. EXISTING UTILITIES

- a. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.
  - 1) Verify that utilities have been disconnected and capped before proceeding with site clearing.
- b. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  - 1) Arrange with utility companies to shut off indicated utilities.
  - 2) Owner will arrange to shut off indicated utilities when requested by Contractor.
- c. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- d. Interrupting Existing Utilities: 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 Engineer not less than two days in advance of proposed utility interruptions.
  - 2) Do not proceed with utility interruptions without Engineer's written permission.
- e. Excavate for and remove underground utilities indicated to be removed.
- f. Removal of underground utilities is included in earthwork sections; and in applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security, and utilities sections.

#### 4. CLEARING AND GRUBBING

- a. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1) Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  - 2) Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
  - 3) Use only hand methods or air spade for grubbing within protection zones.
  - 4) Chip removed tree branches and dispose of off-site
- b. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1) Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

### 5. TOPSOIL STRIPPING

- a. Remove sod and grass before stripping topsoil.
- b. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1) Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- c. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
  - 1) Limit height of topsoil stockpiles to 72 inches.
  - 2) Do not stockpile topsoil within protection zones.
  - 3) Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
  - 4) Stockpile surplus topsoil to allow for respreading deeper topsoil.

### 6. STOCKPILING ROCK

- a. Remove from naturally formed rocks that measure more than 1 foot across in least dimension. Do not include excavated or crushed rock.
  - 1) Separate or wash off non-rock materials from rocks, including soil, clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- b. Stockpile rock away from edge of excavations without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.
  - 1) Limit height of rock stockpiles to 36 inches
  - 2) Do not stockpile rock within protection zones.
  - 3) Dispose of surplus rock. Surplus rock is that which exceeds quantity indicated to be stockpiled or reused.
  - 4) Stockpile surplus rock to allow later use by the Owner.

# 7. SITE IMPROVEMENTS

- a. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- b. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  - 1) Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

2) Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

# 8. DISPOSAL OF SURPLUS AND WASTE MATERIALS

- a. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- b. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

### SECTION 312000 - EARTH MOVING

# PART 1 GENERAL

# 1. RELATED DOCUMENTS

a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

# 2. SUMMARY

- a. Section Includes:
  - 1) Excavating and filling for rough grading the Site.
  - 2) Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses, and plants.
  - 3) Excavating and backfilling for buildings and structures.
  - 4) Drainage course for concrete slabs-on-grade.
  - 5) Subbase course for concrete walks.
  - 6) Subbase course and base course for asphalt paving.
  - 7) Subsurface drainage backfill for walls and trenches.
  - 8) Excavating and backfilling trenches for utilities and pits for buried utility structures.
- b. Related Requirements:
  - 1) Section 013200 "Construction Progress Documentation" and Section 013233 "Photographic Documentation" for recording pre-excavation and earth-moving progress.
  - 2) Section 033000 "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
  - 3) Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
  - 4) Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

# 3. DEFINITIONS

- a. Backfill: Soil material or controlled low-strength material used to fill an excavation.
  - 1) Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2) Final Backfill: Backfill placed over initial backfill to fill a trench.
- b. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

- c. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- d. Borrow Soil: Suitable soil imported from off-site for use as fill or backfill.
- e. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- f. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  - 1) Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer.
  - 2) Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  - 3) Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
  - 4) Unclassified Excavation: Excavation and management of material of whatever nature encountered, except hazardous material.
- g. Fill: Soil materials used to raise existing grades.
- h. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- i. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- j. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- k. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

#### 4. PREINSTALLATION MEETINGS

- a. Pre-installation Conference: Conduct pre-excavation conference at Project site
  - 1) Review methods and procedures related to earthmoving, including, but not limited to, the following:
    - a) Personnel and equipment needed to make progress and avoid delays.
    - b) Coordination of Work with utility locator service.
    - c) Coordination of Work and equipment movement with the locations of tree- and plantprotection zones.
    - d) Extent of trenching by hand or with air spade.
    - e) Field quality control.

# 5. ACTION SUBMITTALS

- a. Product Data: For each type of the following manufactured products required:
  - 1) Geotextiles.
  - 2) Controlled low-strength material, including design mixture.
  - 3) Geofoam.
  - 4) Warning tapes.
- b. Samples for Verification: For the following products, in sizes indicated below:
  - 1) Geotextile: 12 by 12 inches.
  - 2) Warning Tape: 12 inches long; of each color.

# 6. INFORMATIONAL SUBMITTALS

- a. Qualification Data: For qualified testing agency.
- b. Material Test Reports: For each borrow soil material proposed for fill and backfill as follows:
  1) Classification according to ASTM D 2487.
  - Laboratory compaction curve according to ASTM D 698 or ASTM D 1557.
- c. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

# 7. QUALITY ASSURANCE

- a. Blasting: Not permitted.
- b. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

# 8. FIELD CONDITIONS

- a. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
  - 1) Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2) Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- b. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1) Do not proceed with work on adjoining property until directed by Engineer.

- c. Utility Locator Service: Notify "One Call" for area where Project is located before beginning earthmoving operations.
- d. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 311000 "Site Clearing" are in place.
- e. The following practices are prohibited within protection zones:
  - 1) Storage of construction materials, debris, or excavated material.
  - 2) Parking vehicles or equipment.
  - 3) Foot traffic.
  - 4) Erection of sheds or structures.
  - 5) Impoundment of water.
  - 6) Excavation or other digging unless otherwise indicated.
  - 7) Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- f. Do not direct vehicle or equipment exhaust towards protection zones.
- g. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

# PART 2 PRODUCTS

### 1. SOIL MATERIALS

- a. General: Provide borrow soil materials when sufficient suitable soil materials are not available from excavations.
- b. Suitable Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter, or as determined by the Engineer.
- c. Unsuitable Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, a combination of these groups, or as determined by the Engineer.
  - 1) Unsuitable soils also include suitable soils not maintained within 2 percent of optimum moisture content at time of compaction.
- d. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- e. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 294/D 2940M 0; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

- f. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve, or as provided for in associated Geotechnical Reports.
- g. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- h. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve. Drainage course shall be utilized for suitable structural backfill where directed by the Geotechnical Report or ordered by the Engineer, or for the suitable backfill of areas of unclassified or unsuitable material which has been excavated, if and where ordered by the Engineer.
- i. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.
- j. Sand: ASTM C 33/C 33M; fine aggregate.
- k. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

# 2. GEOTEXTILES

- a. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1) Survivability: Class 2; AASHTO M 288.
  - 2) Survivability: As follows:
    - a) Grab Tensile Strength: 157 lbf; ASTM D 4632.
    - b) Sewn Seam Strength: 142 lbf; ASTM D 4632.
    - c) Tear Strength: 56 lbf; ASTM D 4533.
    - d) Puncture Strength: 56 lbf; ASTM D 4833.
  - 3) Apparent Opening Size: No. 40, No. 60, or No. 70 sieve, maximum to be determined by the Engineer; ASTM D 4751.
  - 4) Permittivity: 0.5, 0.2, or 0.1 per second, minimum to be determined by the Engineer; ASTM D 4491.
  - 5) UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- b. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1) Survivability: Class 2; AASHTO M 288.

- 2) Survivability: As follows:
  - a) Grab Tensile Strength: 247 lbf; ASTM D 4632.
  - b) Sewn Seam Strength: 222 lbf; ASTM D 4632.
  - c) Tear Strength: 90 lbf; ASTM D 4533.
  - d) Puncture Strength: 90 lbf; ASTM D 4833.
- 3) Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
- 4) Permittivity: 0.02 per second, minimum; ASTM D 4491.
- 5) UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

### 3. CONTROLLED LOW-STRENGTH MATERIAL

- a. Controlled Low-Strength Material: Self-compacting, low-density, flowable concrete material produced from the following:
  - 1) Portland Cement: ASTM C 150/C 150M, Type I, Type II, or Type III as determined by the Engineer.
  - 2) Fly Ash: ASTM C 618, Class C or F.
  - 3) Normal-Weight Aggregate: ASTM C 33/C 33M, nominal maximum aggregate size to be determined by the Engineer.
  - 4) Foaming Agent: ASTM C 869/C 869M.
  - 5) Water: ASTM C 94/C 94M.
  - 6) Air-Entraining Admixture: ASTM C 260/C 260M.
- b. Produce low-density, controlled low-strength material with the following physical properties:
  - 1) As-Cast Unit Weight: 36 to 42 lb/cu. ft at point of placement, when tested according to ASTM C 138/C 138M.
  - 2) Compressive Strength: 140 psi (965 kPa) when tested according to ASTM C 495/C 495M.
- c. Produce conventional-weight, controlled low-strength material with compressive strength to be determined by the Engineer when tested according to ASTM C 495/C 495M.

#### 4. ACCESSORIES

- a. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
  - 1) Red: Electric.
  - 2) Yellow: Gas, oil, steam, and dangerous materials.
  - 3) Orange: Telephone and other communications.
  - 4) Blue: Water systems.
  - 5) Green: Sewer systems.

- b. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
  - 1) Red: Electric.
  - 2) Yellow: Gas, oil, steam, and dangerous materials.
  - 3) Orange: Telephone and other communications.
  - 4) Blue: Water systems.
  - 5) Green: Sewer systems.

### PART 3 EXECUTION

### 1. PREPARATION

- a. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- b. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- c. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

#### 2. DEWATERING

- a. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
- b. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- c. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
  - 1) Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
- d. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

#### 3. EXPLOSIVES

a. Explosives: Do not use explosives.

#### EARTH MOVING

### 4. EXCAVATION, GENERAL

- a. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include, but is not limited to, rock, soil materials, debris, and obstructions. The Contractor shall immediately notify the Engineer if and where unclassified material is encountered. Additional measurement and payment shall not be made for the excavation, unclassified, of asphalt or concrete surfaces present on site.
  - 1) If excavated materials intended for fill and backfill include unsuitable soil materials and rock, replace with suitable soil materials.
  - Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions unless otherwise specific in project reports or in details:
    - a) 24 inches outside of concrete forms other than at footings.
    - b) 12 inches outside of concrete forms at footings.
    - c) 6 inches outside of minimum required dimensions of concrete cast against grade.
    - d) Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - e) 6 inches beneath bottom of concrete slabs-on-grade.
    - f) 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

# 5. EXCAVATION FOR STRUCTURES

- a. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  - 1) Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
  - 2) Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.
  - Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

# 6. EXCAVATION FOR WALKS AND PAVEMENTS

a. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

# 7. EXCAVATION FOR UTILITY TRENCHES

- a. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1) Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- b. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
  - 1) Clearance: 12 inches each side of pipe or conduit or as indicated on Contract Drawings
- c. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1) For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2) For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
  - 3) For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
  - 4) Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- d. Trench Bottoms: Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
  - 1) Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

# 8. SUBGRADE INSPECTION

- a. Notify Engineer when excavations have reached required subgrade.
- b. If Engineer determines that unsuitable soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- c. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
  - 1) Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
  - 2) Excavate soft spots, unsuitable soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed.

- d. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices changes in the Work, if included.
- e. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

### 9. UNAUTHORIZED EXCAVATION

- a. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.
  - 1) Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

### 10. STORAGE OF SOIL MATERIALS

- a. Stockpile borrow soil materials and excavated suitable soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees
- b. Stockpile and secure petroleum impacted soil, if encountered, during excavation and earthwork on site in a location directed by the Owner. Place material on and cover with 10 mill polyethylene sheeting. Secure covers at all times. Overlap joints a minimum of 12 inches. Maintain the cover, and replace damaged polyethylene sheeting as needed. Do not reuse petroleum impacted material. Sampling and analysis shall be performed by the Owner.

#### 11. BACKFILL

- a. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1) Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
  - 2) Surveying locations of underground utilities for Record Documents.
  - 3) Testing and inspecting underground utilities.
  - 4) Removing concrete formwork.
  - 5) Removing trash and debris.
  - 6) Removing temporary shoring, bracing, and sheeting.
  - 7) Installing permanent or temporary horizontal bracing on horizontally supported walls.
  - b. Place backfill on subgrades free of mud, frost, snow, or ice.

# 12. UTILITY TRENCH BACKFILL

- a. Place backfill on subgrades free of mud, frost, snow, or ice.
- b. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- c. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches or as provided for in Geotechnical Report, of bottom of footings with suitable soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."
- d. Trenches under Roadways: Per Contract Drawings.
- e. Backfill voids with suitable soil while removing shoring and bracing.
- f. Initial Backfill:
  - 1) Soil Backfill: Place and compact initial backfill of suitable soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
    - a) Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
  - 2) Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches) over the pipe or conduit. Coordinate backfilling with utilities testing.
- g. Final Backfill:
  - 1) Soil Backfill: Place and compact final backfill of suitable soil to final subgrade elevation.
  - 2) Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.
- h. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

# 13. SOIL FILL

- a. Contractor shall deliver clean suitable fill material to the project site, if required to meet lines and grades on the Contract Drawings.
- b. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- c. Place and compact fill material in layers to required elevations as follows:
  - 1) Under grass and planted areas, use suitable soil material.

- 2) Under walks and pavements, use suitable soil material.
- 3) Under steps and ramps, use engineered fill.
- 4) Under building slabs, use engineered fill.
- 5) Under footings and foundations, use engineered fill.
- d. Place soil fill on subgrades free of mud, frost, snow, or ice.
- e. Contractor shall provide certification that all fill material is clean and free of environmental contaminants.

#### 14. SOIL MOISTURE CONTROL

- a. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
  - 1) Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
  - 2) Remove and replace, or scarify and air dry, otherwise suitable soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

# 15. COMPACTION OF SOIL BACKFILLS AND FILLS

- a. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- b. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- c. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
  - 1) Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
  - 2) Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent MPD.
  - 3) Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent MPD.
  - 4) For utility trenches, compact each layer of initial and final backfill soil material at 85 percent MPD.

#### 16. GRADING

a. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

- 1) Provide a smooth transition between adjacent existing grades and new grades.
- 2) Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- b. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  - 1) Turf or Unpaved Areas: Plus or minus 1 inch.
  - 2) Walks: Plus or minus 1 inch
  - 3) Pavements: Plus or minus 1/2 inch.
- c. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

### 17. SUBSURFACE DRAINAGE

- a. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.
  - 1) Compact each filter material layer with a minimum of two passes of a plate-type vibratory compactor.
- b. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.
  - 1) Compact each filter material layer with a minimum of two passes of a plate-type vibratory compactor.
  - 2) Place and compact impervious fill over drainage backfill in 6-inch- thick compacted layers to final subgrade.

#### 18. SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- a. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- b. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
  - 1) If specified, install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2) Place base course material over subbase course under hot-mix asphalt pavement.
  - 3) Shape subbase course and base course to required crown elevations and cross-slope grades.

- 4) Place subbase course and base course inches or less in compacted thickness in a single layer.
- 5) Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
- 6) Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.
- c. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of suitable soil materials and compact simultaneously with each subbase and base layer to not less than 95percent of maximum dry unit weight according to ASTM D 698.

### 19. DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

- a. Place drainage course on subgrades free of mud, frost, snow, or ice.
- b. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-ongrade as follows:
  - 1) Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2) Place drainage course 6 inches or less in compacted thickness in a single layer.
  - 3) Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  - 4) Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

# 20. FIELD QUALITY CONTROL

- a. Special Inspections: Engage a qualified special inspector to perform the following special inspections:
  - 1) Determine prior to placement of fill that site has been prepared in compliance with requirements.
  - 2) Determine that fill material classification and maximum lift thickness comply with requirements.
  - 3) Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.
- b. Testing Agency: Engage a qualified geotechnical engineering testing agency to perform tests and inspections. Contractor is responsible for all testing.
- c. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

- d. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.
- e. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:
  - 1) Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
  - 2) Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
  - 3) Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.
- f. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

# 21. PROTECTION

- a. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- b. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1) Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- c. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1) Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

# 22. DISPOSAL OF SURPLUS AND WASTE MATERIALS

a. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, unclassified material, trash, and debris, and legally dispose of them off Owner's property unless otherwise noted in the Contract Documents.

#### END OF SECTION 312000

## SECTION 321216 - ASPHALT PAVING

### PART 1 GENERAL

### 1. RELATED DOCUMENTS

- a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- b. NJDOT Standard Specifications for Road and Bridge Construction, 2007, herein after "NJDOT". Where contradictory statements, more stringent conditions, tests, or requirements exist in NJDOT, same shall take precedence over this document.

### 2. SUMMARY

- a. Section Includes:
  - 1) Cold milling of existing asphalt pavement.
  - 2) Hot-mix asphalt patching.
  - 3) Hot-mix asphalt paving.
  - 4) Hot-mix asphalt overlay.
  - 5) Asphalt curbs.
  - 6) Asphalt traffic-calming devices.
  - 7) Asphalt surface treatments.
- b. Related Requirements:
  - 1) Section 311000 Site Clearing for demolition and removal of existing asphalt pavement.
  - 2) Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
  - 3) NJDOT Standard Specifications for Roadway and Bridge Construction, 2007

#### 3. PREINSTALLATION MEETINGS

- a. Preinstallation Conference: Conduct conference at Project site.
  - 1) Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
    - a) Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
    - b) Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

### 4. ACTION SUBMITTALS

- a. Product Data: For each type of product.
  - 1) Include technical data and tested physical and performance properties.
  - 2) Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
  - 3) Job-Mix Designs: For each job mix proposed for the Work.

### 5. INFORMATIONAL SUBMITTALS

- a. Qualification Data: For manufacturer and testing agency.
- b. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials. or meet NJDOT standards.
- c. Material Test Reports: For each paving material, by a qualified testing agency.
- d. Field quality-control reports.

### 6. QUALITY ASSURANCE

- a. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by the NJDOT.
- b. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.
- c. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of NJDOT 2007 for asphalt paving work.
  - 1) Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

#### 7. FIELD CONDITIONS

- a. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
  - 1) Prime Coat: Minimum surface temperature of 45 deg F
  - 2) Tack Coat: Minimum surface temperature of 45 deg F
  - 3) Slurry Coat: Comply with weather limitations in ASTM D 3910.
  - 4) Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
  - 5) Asphalt Surface Course: Minimum surface temperature of 45 deg F at time of placement.
  - 6) More stringent standards set forth by the NJDOT shall take precedence.

### PART 2 PRODUCTS

- 1. AGGREGATES
  - a. Refer to NJDOT Sections 900 and 902.

## 2. ASPHALT MATERIALS

- a. Refer to NJDOT Section 902.
- b. Water: Potable.
- c. Undersealing Asphalt: ASTM D 3141/D 3141M; pumping consistency.

### 3. AUXILIARY MATERIALS

a. Refer to NJDOT Section 902.

### 4. MIXES

- a. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by the NJDOT and complying with the following requirements:
  - 1) Provide mixes with a history of satisfactory performance in geographical area where Project is located.
  - 2) Base Course: 19M64
  - 3) Surface Course: 9.5M64.

# PART 3 EXECUTION

#### 1. EXAMINATION

- a. Verify that subgrade is dry and in suitable condition to begin paving.
- b. Proceed with paving only after unsatisfactory conditions have been corrected.

#### 2. PREPARATION

- a. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.
- b. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

- 1) Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
- 2) Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons
- 3) Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed.

### 3. COLD MILLING

- a. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
  - 1) Mill to a maximum depth of 3 inches per pass.
  - 2) Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
  - 3) Control rate of milling to prevent tearing of existing asphalt course.
  - 4) Repair or replace curbs, driveway aprons, manholes, and other construction damaged during cold milling.
  - 5) Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
  - 6) Patch surface depressions deeper than 1 inch after milling, before wearing course is laid.
  - 7) Handle milled asphalt material according to approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."
  - 8) Keep milled pavement surface free of loose material and dust.
  - 9) Do not allow milled materials to accumulate on-site.
  - 10) Remove asphalt millings and other debris from the site.

# 4. PATCHING

- a. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.
- b. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.
  - 1) Undersealing: Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.
  - Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.
- c. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.15 gal./sq. yd.
- 1) Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
- 2) Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- d. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.
- e. Placing Patch Material: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

### 5. REPAIRS

- a. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
  - 1) Install leveling wedges in compacted lifts not exceeding 3 inches thick.
- b. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
  - 1) Clean cracks and joints in existing hot-mix asphalt pavement.
  - 2) Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
  - 3) Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

### 6. SURFACE PREPARATION

- a. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- b. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
  - 1) Mix herbicide with prime coat if formulated by manufacturer for that purpose.
- c. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
  - 1) If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
  - 2) Protect primed substrate from damage until ready to receive paving.

- d. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.30 gal./sq. yd. per inch depth. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
  - 1) If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
  - 2) Protect primed substrate from damage until ready to receive paving.
- e. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.15 gal./sq. yd..
  - 1) Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2) Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

### 7. PAVING GEOTEXTILE INSTALLATION

- a. Apply tack coat uniformly to existing pavement surfaces at a rate of 0.20 to 0.30 gal./sq. yd.
- b. Place paving geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.
- c. Protect paving geotextile from traffic and other damage, and place hot-mix asphalt overlay the same day.

### 8. PLACING HOT-MIX ASPHALT

- a. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
  - 1) Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
  - 2) Place hot-mix asphalt surface course in single lift.
  - 3) Spread mix at a minimum temperature of 250 deg F.
  - 4) Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
  - 5) Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphaltpaving mat.
- b. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
  - 1) After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.

- 2) Complete a section of asphalt base course before placing asphalt surface course.
- c. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

### 9. JOINTS

- a. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
  - 1) Clean contact surfaces and apply tack coat to joints.
  - 2) Offset longitudinal joints, in successive courses, a minimum of 6 inches.
  - 3) Offset transverse joints, in successive courses, a minimum of 24 inches.
  - 4) Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints per NJDOT.
  - 5) Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
  - 6) Compact asphalt at joints to a density within 2 percent of specified course density.

### 10. COMPACTION

- a. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
  - 1) Complete compaction before mix temperature cools to 185 deg F.
- b. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- c. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1) Average Density: 96 percent of reference laboratory density according to ASTM D 6927, but not less than 94 percent or greater than 100 percent.
  - 2) Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041/D 2041M, but not less than 90 percent or greater than 96 percent.
- d. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- e. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

- f. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- g. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- h. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 11. ASPHALT CURBS

- a. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread mix at a minimum temperature of 250 deg F.
  - 1) Asphalt Mix: Same as pavement surface-course mix.
- b. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

### 12. ASPHALT TRAFFIC-CALMING DEVICES

- a. Construct hot-mix asphalt speed humps and tables over compacted pavement surfaces. Apply a tack coat unless pavement surface is still tacky and free from dust. Spread mix at a minimum temperature of 250 deg F.
  - 1) Tack Coat Application: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd..
  - 2) Asphalt Mix: Same as pavement surface-course mix.
  - 3) Before installation, mill pavement that will be in contact with bottom of traffic-calming device. Mill to a depth of 1 inch from top of pavement to a clean, rough profile.
- b. Place and compact hot-mix asphalt to cross section indicated, by machine or by hand in wood or metal forms. Tamp hand-placed materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

### 13. INSTALLATION TOLERANCES

- a. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1) Base Course: Plus or minus 1/2 inch.
  - 2) Surface Course: Plus 1/4 inch, no minus.

- b. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1) Base Course: 1/4 inch
  - 2) Surface Course: 1/8 inch
  - 3) Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
- c. Asphalt Traffic-Calming Devices: Compact and form asphalt to produce the contour indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

### 14. SURFACE TREATMENTS

- a. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.
- b. Slurry Seals: Apply slurry coat in a uniform thickness according to ASTM D 3910 and allow to cure.
  - 1) Roll slurry seal to remove ridges and provide a uniform, smooth surface.

### 15. FIELD QUALITY CONTROL

- a. Testing Agency: If specified, engage a qualified testing agency to perform tests and inspections.
- b. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549/D 3549M.
- c. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- d. Asphalt Traffic-Calming Devices: Finished height of traffic-calming devices above pavement will be measured for compliance with tolerances.
- e. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979/D 979M.
  - 1) Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041/D 2041M, and compacted according to job-mix specifications.
  - 2) In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726/D 2726M.
    - a) One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than three cores taken.

- b) Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726/D 2726M.
- f. Replace and compact hot-mix asphalt where core tests were taken.
- g. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

### 16. WASTE HANDLING

a. General: Handle asphalt-paving waste according to approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."

### END OF SECTION 321216

### SECTION 323119 - DECORATIVE METAL FENCES AND GATES

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Decorative aluminum fences.
  - 2. Swing gates.
- B. Related Requirements:
  - 1. Section 033053 "Miscellaneous Cast-in-Place Concrete" for concrete

### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For fencing and gates.
  - 1. Include plans, elevations, sections, gate locations, post spacing, and mounting and attachment details.
- C. Samples: For each fence material and for each color specified.
  - 1. Provide Samples 12 inches (300 mm) in length for linear materials.

### 1.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

### PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Wind Loading:
  - 1. Fence Height: 6'-0" at ground level
  - 2. Wind Exposure Category: C.

### DECORATIVE METAL FENCES AND GATES

3. Design Wind Speed: 90 mph.

### 2.2 DECORATIVE ALUMINUM FENCES

- A. Decorative Aluminum Fences: Fences made from aluminum extrusions.
  - 1. Ameristar Fence Products
  - 2. American Railing Systems
  - 3. Iron Eagle Industries
  - 4. Or approved equal
- B. Posts: Square extruded tubes, to match existing fence on site.
  - 1. Line Posts: to match wall existing fence post size.
- C. Post Caps: Aluminum castings that cover entire top of posts with finial to match existing.
- D. Rails: Extruded-aluminum channels, to match existing fence with 2 horizontal rails.
- E. Pickets: Extruded-aluminum tubes, square, to match existing dimensions.
  - 1. Extend pickets beyond top rail to match existing.
  - 2. Picket Spacing: to match existing.
- F. Fasteners: Manufacturer's standard concealed fastening system.
- G. Fasteners: Manufacturer's standard tamperproof, corrosion-resistant, color-coated fasteners matching fence components.
- H. Fabrication: Assemble fences into sections by welding pickets to rails.
  - 1. Fabricate sections with clips welded to rails for field fastening to posts.
  - 2. Drill clips for fasteners before finishing.
- I. Finish exposed welds to comply with NOMMA Guideline 1, Finish #4 good-quality, uniform undressed weld with minimal splatter.
- J. Finish: Baked enamel or powder coating.

### 2.3 SWING GATES

- A. Gate Configuration: As indicated.
- B. Gate Frame Height: to match fence height in each location
- C. Gate Opening Width: (2) 48" wide opening, 1 leaf gates.
- D. Aluminum Frames and Bracing: Fabricate members from square extruded-aluminum tubes to match existing.

- E. Frame Corner Construction: Welded.
- F. Additional Rails: Provide as indicated, complying with requirements for fence rails.
- G. Infill: Comply with requirements for adjacent fence.
- H. Picket Size, Configuration, and Spacing: Comply with requirements for adjacent fence.
- I. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than 5 feet (1.52 m) wide. Provide center gate stops and cane **bolts** for pairs of gates.
- J. Spring Hinges: BHMA A156.17, Grade 1, suitable for exterior use.
  - 1. Function: 320 Gate spring pivot hinge. Adjustable tension
  - 2. Material: Malleable iron; galvanized.
- K. Hinges: BHMA A156.1, Grade 1, suitable for exterior use.
  - 1. Function: 39 Full surface, triple weight, antifriction bearing.
  - 2. Material: Wrought steel, forged steel, cast steel, or malleable iron; galvanized.
- L. Rim Locks: BHMA A156.5, Grade 1, suitable for exterior use.
  - 1. Function: 621 Latchbolt by key from outside and by turn from inside. Latchbolt is held retracted by device from inside
  - 2. Material: Cast, forged, or extruded brass or bronze.
  - 3. Mounting Plate: Configuration necessary for mounting locks. Fabricate from 1/8-inch- (3.2-mm-) thick, **aluminum plate**.
- M. Exit Hardware: BHMA A156.3, Grade 1, Type 1 (rim exit device), with push pad actuating bar, suitable for exterior use.
  - 1. Function: 04 Entrance by trim when latch bolt is released by key or set in a retracted position by key.
  - 2. Mounting Channel: Bent-plate channel formed from 1/8-inch- (3.2-mm-) thick, aluminum plate. Channel spans gate frame. Exit device is mounted on channel web, recessed between flanges, with flanges extending 1/8 inch (3.2 mm) beyond push pad surface.
- N. Finish exposed welds to comply with NOMMA Guideline 1, Finish #4 good-quality, uniform undressed weld with minimal splatter.
- O. Aluminum Finish: Baked enamel or powder coating.

### 2.4 ALUMINUM

A. Aluminum, General: Provide alloys and tempers with not less than the strength and durability properties of alloy and temper designated in paragraphs below for each aluminum form required.

- B. Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T5.
- C. Tubing: ASTM B 429/B 429M, Alloy 6063-T6.
- D. Plate and Sheet: ASTM B 209 (ASTM B 209M), Alloy 6061-T6.
- E. Die and Hand Forgings: ASTM B 247 (ASTM B 247M), Alloy 6061-T6.
- F. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

### 2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
  - 1. For aluminum, provide type and alloy as recommended by producer of metal to be welded and as required for strength and compatibility in fabricated items.
- B. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Section 033000 "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi (20 MPa), 3-inch (75-mm) slump, and 1-inch (25-mm) maximum aggregate size or dry, packaged, normal-weight concrete mix complying with ASTM C 387/C 387M mixed with potable water according to manufacturer's written instructions.
- C. Nonshrink Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M and specifically recommended by manufacturer for exterior applications.

### 2.6 ALUMINUM FINISHES

- A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils (0.05 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
  - 1. Color and Gloss: to match existing fence on site.

### PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work.
- B. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### DECORATIVE METAL FENCES AND GATES

### 3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.
  - 1. Construction layout and field engineering are specified in Section 017300 "Execution."

### 3.3 DECORATIVE FENCE INSTALLATION

- A. Install fences according to manufacturer's written instructions.
- B. Install fences by setting posts as indicated and fastening infill panels to posts. Peen threads of bolts after assembly to prevent removal.
- C. Post Excavation: Excavate holes to a diameter of not less than 4 times post size and a depth of not less than 36 inches (600 mm) plus 3 inches (75 mm) for each foot (300 mm) or fraction of a foot (300 mm) that fence height exceeds 4 feet (1.2 m).
- D. Post Setting: Set posts in concrete at indicated spacing.
  - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
  - 2. Concrete Fill: Place concrete around posts and sleeves and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
    - a. Exposed Concrete: Extend 4 inches (51 mm) above grade. Finish and slope top surface to drain water away from post.
  - 3. Posts Set into Voids in Concrete: Form or core drill holes not less than 3/4 inch (20 mm) larger than outside diagonal dimension of post.
    - a. Extend posts at least 5 inches (125 mm) into concrete.
    - b. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink grout, mixed and placed to comply with grout manufacturer's written instructions. Finish and slope top surface of grout to drain water away from post.

### 3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

### 3.5 GROUNDING AND BONDING

A. Fence Grounding: Install at maximum intervals of **1500 feet (450 m)** except as follows:

- 1. Fences within 100 Feet (30 m) of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of **750 feet (225 m)** 
  - a. Gates and Other Fence Openings: Ground fence on each side of opening.
    - 1) Bond metal gates to gate posts.
    - 2) Use No. 2 AWG wire and bury it at least 18 inches (460 mm) below finished grade.
- B. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a maximum distance of 150 feet (45 m) on each side of crossing.
- C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches (150 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.
- D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.
- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
  - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
  - 2. Make connections with clean, bare metal at points of contact.
  - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
  - 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
  - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- F. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

### 3.6 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

### END OF SECTION 323119

# **EXISTING BLEACHER REPAIRS AND RELATED WORK**



# HARRISON-HAMNETT STRUCTURAL ENGINEERS

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FOR THE

# THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD, EWING TOWNSHIP, NEW JERSEY 08618





SPIEZLE ARCHITECTURAL GROUP, INC 1395 YARDVILLE HAMILTON SQUARE ROAD SUITE 2A HAMILTON, NJ 08691 Phone: 609.695.7400 Fax: 609.394.2274 www.spiezle.com





CAMPUS PLAN - NOT TO SCALE

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ABBREVIATIONS	MATERI	AL SYMBO
CJ CONTROL JOINT CMU CONCRETE MASONRY UNIT CEME COLD FORMED METAL FRAMING		BATT INSULATION / SOU
DN DOWN DWG DRAWING EIFS EXTERIOR INSULATION AND FINISH SYSTEM		BRICK
EL ELEVATION EQ EQUAL EJ EXPANSION JOINT		CONCRETE
EWC       ELECTRIC WATER COOLER         FD       FLOOR DRAIN         FE       FIRE EXTINGUISHER (BRACKET MOUNTED)         EEC       EIDE EXTINGUISHER (CARINET)		CONCRETE MASONRY L
FEC FIRE EXTINGUISHER CABINET FT FOOT or FEET FRTW FIRE RETARDANT TREATED WOOD GALV GALVANIZED		EARTH
GSFGROSS SQUARE FEETGWBGYPSUM WALL BOARDHMHOLLOW METAL		FIRE SAFING
HP     HIGH POINT       LP     LOW POINT       MAX     MAXIMUM		GYPSUM WALL AND/OF
MO MASONRY OPENING N/A NOT APPLICABLE NIC NOT IN CONTRACT		MORTAR NET
NSF NET SQUARE FEET OC ON CENTER OD OVERFLOW DRAIN OR OUTSIDE DIAMETER		MORTAR / GROUT
PTD PAINT or PAINTED PTW PRESSURE TREATED WOOD PVC POLYVINYL CHLORIDE PD POOF DRAW		PLYWOOD
REINF REINFORCED OR REINFORCING RWC RAIN WATER CONDUCTOR SE SOUARE FEET		POROUS FILL or SUB-SL
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		STEEL





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STEEL FENCE POST —

3 TYPICAL FENCE DETAIL

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THOMAS S. PERRINO         21AI015054           SCOTT E. DOWNIE         21AI016744           STEVEN LEONE         21AI011701	00 00 00
SIEVEN G. SIEGEL         21AI015642           ANGELO ALBERTO         21AI010467           JOHN F. WRIGHT         21A017842           SPIEZLE ARCHITECTURAL GROUP. INC         21A000630	00 00 00 00
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1 ACKERMAN BASEBALL FIELD - DEMOLITION PLAN

DEMOLITION NOTES: 1. CONTRACTOR SHALL TEMPORARILY RELOCATE BLEACHER SEATING TO ALLOW FOR REMEDIAL GRADING. 2. CONTRACTOR SHALL REMOVE STONE BASE PRIOR TO REGRADING AND DISPOSE OF OFF SITE.





CODE REVIEW:
CERTIFICATE:
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SPIEZLE ARCHITECTURAL GROUP INC.
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SIGNATURE:         21AI01505400           THOMAS S. PERRINO         21AI01674400           SCOTT E. DOWNIE         21AI01674400           STEVEN LEONE         21AI01170100           STEVEN G. SIEGEL         21AI01564200
ANGELO ALBERTO 21AI01046700 JOHN F. WRIGHT 21AI01784200 SPIEZLE ARCHITECTURAL GROUP, INC. 21AC00063000
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EXISTING BLEACHER
REPAIRS AND RELATED WORK
FOR
THE COLLEGE OF NEW
JERSEY
2000 PENNINGTON ROAD, EWING TOWNSHIP, NEW JERSEY 08618
FOR CODE REVIEW: 05/02/2022
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# 1 FIELD HOCKEY AND LACROSSE - UPPER DEMOLITION PLAN



# 2 FIELD HOCKEY AND LACROSSE - LOWER DEMOLITION PLAN



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<u>DEMOLITION NOTES:</u> 1. WHERE PRECAST WALL CAPS ARE NOTED TO BE REMOVED, THE CONTRACTOR SHALL REMOVE THE RAILING TO THE NEAREST POST ON EITHER SIDE AND SAVE FOR REINSTALLATION.





PLAN

NORTH

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SPIEZLE ARCHITECTI 1395 YARDVILLE HAMILTO	JRAL GROUP INC. ON SQUARE ROAD
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SIGNATURE: THOMAS S. PERRINO SCOTT E. DOWNIE STEVEN LEONE	21AI01505400 21AI01674400 21AI01170100
STEVEN G. SIEGEL ANGELO ALBERTO JOHN F. WRIGHT SPIEZLE ARCHITECTURAL GROUP, INC.	21AI01564200 21AI01046700 21AI01784200 21AC00063000
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1 JUNE WALKER - DEMOLITION PLAN



2 JUNE WALKER - DUG OUT PLANS

### REMOVE EXISTING PAINT AT SPALLED CONCRETE COLUMN

 REMOVE EXISTING ALL RUST FROM UNDERSIDE OF DECK ABOVE



<u>DEMOLITION NOTES:</u> 1. WHERE PRECAST WALL CAPS ARE NOTED TO BE REMOVED, THE CONTRACTOR SHALL REMOVE THE RAILING TO THE NEAREST POST ON EITHER SIDE AND SAVE FOR REINSTALLATION. 2. WHERE DAMAGED CAPS ARE TO BE REPLACED, THE CONTRACTOR SHALL REMOVE THE ENTIRE SECTION FOR REPLACEMENT. SAWCUTTING FOR PARTIAL REPLACEMENT WILL NOT BE ACCEPTED.







CERTIFI	spie	zle
	SPIEZLE ARCHI 1395 YARDVILLE HA	TECTURAL GROUP INC MILTON SQUARE ROAE SUITE 24 HAMILTON, NJ 0869 <sup>7</sup> PHONE: 609-695-7400
SIGNATI THOMAS S. SCOTT E. D STEVEN LEU STEVEN G. ANGELO AL JOHN F. WF SPIEZLE AR	URE: PERRINO OWNIE ONE SIEGEL BERTO RICHT CHITECTURAL GROUP, INC.	21AI0150540 21AI0167440 21AI0117010 21AI0156420 21AI0104670 21AI0178420 21AC0006300
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SPIEZLE ARCHITECTURAL GROUP INC. 1395 YARDVILLE HAMILTON SQUARE ROAD SUITE 2A HAMILTON, NJ 08691 PHONE: 609-695-7400
SIGNATURE:           THOMAS S. PERRINO         21AI01505400           SCOTT E. DOWNIE         21AI01674400
STEVEN LEONE         21AI01170100           STEVEN G. SIEGEL         21AI01564200           ANGELO ALBERTO         21AI01046700           JOHN F. WRIGHT         21AI01784200           SPIEZLE ARCHITECTURAL GROUP, INC.         21AC00063000
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1 LIONS TRACK - DEMOLITION PLAN

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EXISTING SIDEWALK





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KEYPLAN - FIELD HOCKEY AND LACROSSE COMPLEX N.T.S.



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1 LIONS STADIUM - FIRST FLOOR PLAN

# **LIONS STADIUM - SCOPE NOTES**

CONTRACTOR SHALL PERFORM THE FOLLOW WORK WITHIN THE SCOPE LIMITATIONS DEFINED ON THE OVERALL FLOOR PLAN:

- REMOVE AND REPLACE ALL RUSTING CONDUITS, PIPE HANGER CLAMPS.
   CONTRACTOR TO VERIFY ALL LOCATIONS IN FIELD.
   REMOVE AND REPLACE ALL UN-TENSIONED/BENT STRUCTURAL STEEL TIE-RODS
- UNDER BLEACHERS. VERIFY AND ENSURE THAT ALL TIE-RODS HAVE WASHERS. CONTRACTOR TO PROVIDE WASHERS WHERE CURRENTLY NOT PRESENT. ALLOW FOR INSTALLATION
- IN 25 LOCATIONS. . SECURE ANY LOOSE RAILS ON CHAIN LINK FENCING.
- . REPLACE ALL RUSTING HARDWARE ON BLEACHERS RAILINGS. REPLACE ALL MISSING SCREWS AND NUTS CONNECTING THE ALUMINUM BLEACHER
- DECK TO STRUCTURAL FRAMING. CONTRACTOR TO REGRADE BELOW BLEACHER SO THAT ALL COLUMN BASE PLATES, BOLTS AND TOPS OF CONCRETE PIERS ARE EXPOSED. CLEAN ALL RUSTED BOLTS AND PAINT WITH COLD GALVANIZED PAINT. (APPROX 12,000 SF)



PLAN

NORTH

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KEYPLAN - LIONS STADIUM N.T.S.

CODE REVIEW:
CERTIFICATE:
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SPIEZLE ARCHITECTURAL GROUP INC. 1395 YARDVILLE HAMILTON SQUARE ROAD SUITE 2A
HAMILTON, NJ 08691 PHONE: 609-695-7400
SIGNATURE:           THOMAS S. PERRINO         21AI01505400           SCOTT E. DOWNIE         21AI01674400
STEVEN LEONE         21AI017/0100           STEVEN G. SIEGEL         21AI01564200           ANGELO ALBERTO         21AI01046700           JOHN F. WRIGHT         21AI01784200           SDIEZE E APCHUTECTURAL COOLID, INC.         214C0063000
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CONSULTANTS:
EXISTING BLEACHER REPAIRS AND RELATED
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FOR
THE COLLEGE OF NEW JERSEY
2000 PENNINGTON ROAD, EWING TOWNSHIP, NEW JERSEY 08618
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# LIONS TRACK - SCOPE NOTES

- CONTRACTOR SHALL PERFORM THE FOLLOW WORK WITHIN THE SCOPE LIMITATIONS DEFINED ON THE OVERALL FLOOR PLAN:
- CONTRACTOR SHALL COORDINATE NEW BLEACHER DESIGN INCLUDING OVERALL DIMENSIONS FOR ASSEMBLY AS WELL AS CONCRETE FOUNDATION PAD WITH BLEACHER VENDOR.
   CONTRACTOR SHALL OBTAIN SIGNED AND SEALED ENGINEERING DRAWINGS FROM VENDOR FOR INSTALLATION.
   BLEACHER VENDOR SHALL COORDINATE LOCATIONS AND ELEVATIONS OF LANDING FOR ACCESS TO NEW PRESS BOX PROVIDED BY OWNER.
   PROVIDE NEW ASPHALT WALKWAYS AT EACH END OF BLEACHER AS INDICATED ON PLANS
- PLANS.



KEYPLAN - LIONS TRACK N.T.S.

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— 5'-0" WIDE
 PERMEABLE
 ASPHALT
 WALKWAY.
 COORDINATE
 EXACT
 LOCATION
 WITH EXTENTS
 FOR
 BLEACHERS

CERTIFICATE:
spiezie
1395 YARDVILLE HAMILTON SQUARE ROAD SUITE 2A HAMILTON, NJ 08691
PHONE: 609-695-7400 
THOMAS S. PERRINO         21A01305400           SCOTT E. DOWNIE         21A01674400           STEVEN LEONE         21A0170100           STEVEN G. SIEGEL         21A01564200           ANGELO ALBERTO         21A014700
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2 BLEACHER SECTION @ AISLEWAY





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SPIEZLE ARCHITECTURAL GROUP INC.
1395 YARDVILLE HAMILTON SQUARE ROAD SUITE 2A HAMILTON, NJ 08691 PHONE: 609-695-7400
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# **CONTRACT FOR CONSTRUCTION**

This AGREEMENT	is entered into as of the	day of	_,, between
The College:	The College of New Jersey PO Box 7718 2000 Pennington Road Ewing, New Jersey 08628-	o ("TCNJ" or the "C 0718	ollege")
and			
the Contractor:		_ (the "Contractor") - -	
in connection with			
the Project:	[		] (the "Project")
The Architect:		-	

### <u>ARTICLE 1</u> EMPLOYMENT OF THE CONTRACTOR/THE PROJECT DESCRIPTION

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

# ARTICLE 2 THE CONTRACT DOCUMENTS

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

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

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

### ARTICLE 3 SCOPE OF WORK

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

# ARTICLE 4 CONTRACT TIMES

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

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

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

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

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

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

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

\$ 1/20th of 1% per calendar day.

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

### ARTICLE 5 CONTRACT PRICE

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

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

[\_\_\_\_]

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

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

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

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

# ARTICLE 6 PAYMENTS TO THE CONTRACTOR

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

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

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

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

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

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

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

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

(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 <u>N.J.S.A.</u> 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, <u>N.J.S.A.</u> 2A:30A-1, <u>et seq.</u> Interest on amounts due shall be payable to the Contractor for the period beginning on the day after the required payment date and ending on the date on which the check for payment is drawn. Interest may be paid by separate payment to the Contractor, but shall be paid within 30 days of payment of the principal amount of the approved invoice. Nothing in this Article shall be construed as entitling the Contractor to payment of interest on any sum withheld by the College for any reason permitted under the Contract Documents or applicable law, or on any claim for additional compensation, over and above sums due under the base Contract Price or approved change orders.

### ARTICLE 7 DISPUTE RESOLUTION

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

# ARTICLE 8 TERMINATION OR SUSPENSION

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

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

### ARTICLE 9 INSURANCE AND BONDS

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

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

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

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

### ARTICLE 10 OTHER PROVISIONS

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

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

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

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

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

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

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

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

Name	Position
	Project Executive
	Project Manager
	Project Superintendent
	Project Scheduler

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

TCNJCC

By		By
-	Sharon Blanton,	-
	Vice President for Operations	]
Date_		Date

Anup Kapur, Executive Director of Procurement

Date\_\_\_\_\_

# **CONTRACTOR:**

By\_\_\_\_\_

Title\_\_\_\_\_

Date\_\_\_\_\_
#### 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 ployment, 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 contactor 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 work-force 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 17:27-1.1 et seq)**.

IF AWARDED A CONTRACT YOUR COMPANY/FIRM WILL BE REQUIRED TO COMLY 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 <a href="http://NJ.gov/JobCentralNJ">http://NJ.gov/JobCentralNJ</a>;

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. 17:27-1.1 et seq.

To ensure successful implementation of the Executive Order and Law, state agencies, independent authorities and colleges and universities must forward an Initial Project Workforce Report (AA 201) for <u>any projects funded with ARRA money to the Dept.</u> 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)					
Partnership Limited Partnership Limited Liability Partnership (LLP)					
Other (be specific):					

## <u>Part II</u>

П

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	s Entity Home Address (for Individuals) or Business Address		

# $\underline{Part~III}$ 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 <u>N.J.S.A.</u> 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** 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 (<u>https://www.njstart.gov/bso/</u>) to check the status of a vendor's Chapter 51 certification before contacting the Review Unit's mailbox at <u>CD134@treas.nj.gov</u>. 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 <u>CD134@treas.nj.gov</u> 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 <u>must</u> 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 <u>and all</u> individuals and/or entities whose contributions are attributable to the business entity. (<u>No</u> 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 <u>and all</u> individuals and/or entities whose contributions are attributable to the business entity <u>with the exception</u> 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: <u>cd134@treas.nj.gov</u> 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: <u>https://www.state.nj.us/treas/purchase/eo134questions.shtml</u>.

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



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

FOR STAT	E USE ONLY	]
	Awar	d Amount
Conta	ct Person	
Conta	ict Email	
eing Funded Using F	FHWA Funds	
		Please check if requesting
<u>n</u>		recertification $\Box$
(Including trade n	ame if applicable	2)
State	Zip	Phone
Vendor FFIN	(SS# if sole pror	rietor/natural person)
	FOR STAT FOR STAT Conta Conta Conta eing Funded Using I (Including trade n State	FOR STATE USE ONLY

MUST BE COMPLETED IN FULL

□ Corporation: LIST ALL OFFICERS and any 10% and greater shareholder (If the corporation only has one officer, please write

- □ Professional Corporation: LIST ALL OFFICERS and ALL SHAREHOLDERS "sole officer" after the officer's name.)
- □ 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 <u>all</u> 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, Sharehold	ers, 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 Con Legislative Leadership Com	nmittee mittee
Full	Legal Name of Recipient	
Addr	ess of Recipient	
Date	of Contribution	Amount of Contribution
Туре	e of Contribution (i.e. currend	cy, check, loan, in-kind)
Cont	ributor Name	
Rela I	tionship of Contributor to the If this form is not being comp Remove Contribution	e Vendor
	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 <u>and all</u> 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 <u>and all</u> individuals and/or entities whose contributions are attributable to the business entity as listed on Page 1 under <u>Part 1: Vendor Information</u>, 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:

- 1. I have read the Information and Instructions accompanying this form prior to completing the certification on behalf of the business entity.
- 2. 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 Legisative 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 renew a contract must complete the certification person or entity's parents, subsidiaries, or affi Treasury as a person or entity engaging in inv of the principles which are the subject of this contract, including but not limited to, imposing default and seeking debarment or suspension	on or entity that submits a bid or proposal or otherwise proposes to enter into or on below to attest, under penalty of perjury, that the person or entity, or one of the iliates, is not identified on a list created and maintained by the Department of the vestment activities in Iran. If the Director finds a person or entity to be in violation law, s/he shall take action as may be appropriate and provided by law, rule or ing sanctions, seeking compliance, recovering damages, declaring the party in of the person or entity.
I certify, pursuant to Public Law 2012, c. 25	5, that the person or entity listed above for which I am authorized to bid/renew:
is not providing goods or services of \$2 provides oil or liquefied natural gas tank liquefied natural gas, for the energy sec	20,000,000 or more in the energy sector of Iran, including a person or entity that kers, or products used to construct or maintain pipelines used to transport oil or stor of Iran, <b>AND</b>
is not a financial institution that extends if that person or entity will use the credit	s \$20,000,000 or more in credit to another person or entity, for 45 days or more, to provide goods or services in the energy sector in Iran.
In the event that a person or entity is unab subsidiaries, or affiliates has engaged in t description of the activities must be provid of perjury. Failure to provide such will resu penalties, fines and/or sanctions will be as	ble to make the above certification because it or one of its parents, the above-referenced activities, a detailed, accurate and precise ded in part 2 below to the Division of Purchase and Property under penalty ult in the proposal being rendered as non-responsive and appropriate sessed as provided by law.
EACH BOX WILL PROMPT YOU TO PROVI THOROUGH ANSWERS TO EACH QUESTION.	DE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE 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
ertification: I, being duly sworn upon my oath, here est of my knowledge are true and complete. I attess erson or entity. I acknowledge that the State of New n under a continuing obligation from the date of th writing of any changes to the answers of informat lse statement or misrepresentation in this certificat of that it will also constitute a material breach of m ny contract(s) resulting from this certification void	eby represent and state that the foregoing information and any attachments thereto to the t that I am authorized to execute this certification on behalf of the above-referenced w Jersey is relying on the information contained herein and thereby acknowledge that his certification through the completion of any contracts with the State to notify the State tion contained herein. I acknowledge that I am aware that it is a criminal offense to make a ation, and if I do so, I recognize that I am subject to criminal prosecution on under the law hy agreement(s) with the State of New Jersey and that the State at its op tion may declare and unenforceable.
JII Name (Print):	Signature:



#### **VENDOR QUALIFICATION SHEET**

Vendors are required to submit evidence of qualifications to meet all requirements as required by the Office of Finance & Business Services at The College of New Jersey by providing the information listed below.

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.

4

	А.	
	В.	
	С.	
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:
dress where all purchase orders and payment are to be mailed by users of any contract(s) resulting from s proposal (if different from above).
Purchase Orders:
Firm Name:
Street Address:
City/State/Zip:
Remittances:
Firm Name:
Street Address:
City/State/Zip:

#### VENDOR OUALIFICATIONS- 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 contification statement from the New Jersey Commerce and F	/? If yes, p	lease <u>attach</u> a Frowth Comm	certificate or
	and you would like to register, please contact the New Jerse Commission at 609-777-0885.	ey Comme	erce and Ecor	nomic Growth
	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 OUALIFICATIONS-

- 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, though 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:\_\_\_\_\_

# THE COLLEGE OF NEW JERSEY

December 2007

# GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

#### TABLE OF CONTENTS

	A. Definitions	1
	B. Intent of Contract Documents	2
	C. Interpretation of Contract Documents	2
	D. Law and Referenced Standards.	2
	E. Plans and Specifications	3
	F. Order of Precedence of Contract Documents	
	G. Organization of Plans and Specifications	
	H. Required Approvals	
	I. Conformity of Work to Contract Documents	
	J. Work Involving Existing Structures.	4
	K Verification of Dimensions.	4
	L. Manufacturer Literature	4
	M. Quality General Requirement.	4
	N. Examination of Contract Documents Before Bidding/Errors, etc.	4
	O. Site Information	4
	P. Sufficiency of Documents Provided for Bidding.	5
	Q. Examination of Site Before Bidding.	5
	R. Hazardous Materials On Site.	5
	S. Limitation on Claims Based on Contract Documents and Information Provided	for Bidding.5
Ał	RTICLE 2. THE COLLEGE	5
	A. General Rights and Responsibilities of the College.	5
	B. College Representative, Authority to Decide Contract Questions	6
	C. Required Approvals	6
	D. Information Required from College.	6
	E. Permits, Responsibility for	6
	F. College Inspection of the Project.	7
	G. College Inspectors, Duties and Limitations	7
	H. College Rejection of Defective Work	7
AI	RTICLE 3. ARCHITECT	8
		0
	A. Architect's General Role	8
	B. Architect's Access and Facilities.	
	C. Limitation of Architect's Responsibilities	8
	D. Architect Rejection of Work.	
	E. Architect Review of Contractor Submittals.	8
	F. Architect Review of Contractor As-Built Plans	8
	G. Architect Determination of Satisfactory Completion	9
AI	RTICLE 4. CONTRACTOR.	9
	A Contractor Responsibility for Performance of the Contract and Work	Q
	B Contractor Key Personnel	ر ۵
	C. Contractor Supervision of Contract Work/Superintendent	
	D Cooperation with College and Other Contractors	و9 Q

ARTICLE 5. PERFORMANCE OF WORK	10
A. Protection of Work/Materials. etc.	
B. Safety and Safety Programs	
C. Working Hours.	
D Site Security	
F Site Use	
E. Submittals (Shon Drawings Product Data Samples)	11 11
G. Layout and Dimensional Control	11
H. Construction Access Roads Walks and Parking	
I. Construction Site Condition Storage Duct Control	12
I. Construction Site Condition, Storage, Dust Control.	12
J. Photographs.	12
K. Project Sign.	13
L. Soil Conservation.	13
M. Temporary Facilities, Services, Electric, Heat and Enclosures.	13
N. Substitutions (To Be Included in Bid)	13
O. License Fees	14
ARTICLE 6 SUBCONTRACTORS	14
A Contractor Responsibility for Subcontracted Work	14
B Subcontractor Identification and Approval	14 1/
C Subcontractor Qualifications	
D. Subcontractor Compliance with Contract/Subcontractor Supervisors	15
E. No Contract Deletionship Detween College and Subcontractors	15
E. No Contract Relationship Between Conege and Subcontractors.	13
ARTICLE 7. TIME, LIQUIDATED DAMAGES, DELAY CLAIMS AGAINST COLLEGE	15
A. Contract Times	15
B. Liquidated Damages For Delay.	15
C. Delay Claims Against The College	16
D. Mediation	16
ARTICLE 8.PROJECT SCHEDULE	16
A Concert Calcula Description	10
A. General Schedule Requirements	10
B. Form and Content of Schedule	16
C. Computerization of Schedule	1/
D. Weather Inclusion in Schedule.	
E. Schedule Updates	
F. Meetings/Eight Week Bar Charts	
G. Schedule Documentation for Contract Payments	19
H. Progress, and Recovery Schedules	19
I. Contractor Failure to Provide Schedule Updates	19
J. Scheduler Qualifications	19
ARTICLE 9. EXTENSIONS, COMPENSATION FOR CERTAIN EXTENSIONS	19
A. Delays Warranting Extensions of Contract Dates	19
B. Weather Delays.	20
C. Float Time Use	20
D. Calculation of Extensions	20
E. Elimination of Delays and Extensions (Acceleration)	

F. Requests for Extensions Required	
G. Compensation for Certain Extensions and Limitations	
ARTICLE 10. PAYMENTS TO CONTRACTOR	
	21
A. Monthly Progress Payments.	
B. Unit Schedule Breakdown/CPM Activity Price Breakdown.	
C. Invoices for Monthly Progress Payments: Form and Content.	
D. Payment for Materials and Equipment Procured But Not Installed	23
E. Retainage	
F. Payment For Change Order Work	24
G. Final Payment	24
H. Payment Terms	24
I. Payment Based on Partial Acceptance (Limitation)	24
J. Failure to Pay Amounts in Dispute Not to Affect Performance	24
K. Waiver of Certain Claims by College Against Contractor in	
Connection with Final Payment.	24
ARTICLE 11. CHANGES	24
A. Changes Authorized	24
B. Change Request or Directive	25
C. Change Orders Which Are Protested	25
D. Changes Affecting Contract Times.	25
E. Contractor Initiated Change Order Requests	
F. Change Order Amounts.	
G. Right to Audit Extra Costs (Before and After Payment).	
H. Change Orders with Both Price Increases and Decreases	
I. Waiver of Rights In Connection with Change Orders Issued Without Protest	
ARTICLE 12. COMPLETION	27
A. Substantial Completion.	
B. Final Completion.	
•	
ARTICLE 13. SUSPENSION AND TERMINATION OF CONTRACT	28
A. Suspension.	28
B. Termination for Convenience.	29
C. Termination for Cause	29
D. Surety Takeover Following Termination for Cause.	30
ARTICLE 14. WARRANTY/DEFECTIVE WORK AND MATERIALS.	
A. General One Year Warranty; HVAC Two Year Warranty	
B. Defective Work, Materials and Equipment.	
······ , ···· 1 <sup></sup> T	

ARTICLE 15. MISCELLANEOUS.	31
	21
A. Insurance, Bonds, Indemnification.	31
B. Prevailing Wage	31
C. Employment Discrimination.	32

D. Patents	32
E. Emergencies Affecting Safety.	32
F. Contractor Compliance with Law.	32
G. Environmental Protection - Contractor Duty to Comply with Law.	32
H. No Personal Liability of College Officials	33
I. Recovery of Monies by College from other Contracts with the Contractor	33
J. Buy American Requirement.	33
K. Modification of Contract (Form)	33
L. State Sales Tax Exemption.	33
M. Assignment of Contract Funds and Claims Prohibited.	34
N. Independent Contractor Status.	34
O. Third Party Beneficiary Rights Not Intended	34
P. Gifts to College Employees and Agents Prohibited.	34
Q. Contractor Claims: Procedures and Limitations.	34
R. Cost Records a Condition of Receiving or Retaining Extra Compensation on	
Extras, Changes and Claims.	35



# GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

Last Revised May 2021

## **TABLE OF CONTENTS**

## Page

ARTICLE 1	CONTRACT DOCUMENTS, INTERPRETATION, INFORMATION FOR BIDDERS, CLAIMS BASED ON BID AND CONTRACT DOCUMENTS	1
1.1	Definitions	1
1.2	Intent Of Contract Documents.	3
1.3	Interpretation Of Contract Documents	3
1.4	Law And Referenced Standards	3
1.5	Plans And Specifications.	4
1.6	Order Of Precedence Of Contract Documents	4
1.7	Organization Of Plans And Specifications.	4
1.8	Required Approvals.	5
1.9	Conformity Of Work To Contract Documents.	5
1.10	Work Involving Existing Structures.	5
1.11	Verification Of Dimensions.	5
1.12	Manufacturer Literature.	5
1.13	Quality General Requirement	6
1.14	Examination Of Contract Documents Before Bidding/Errors	6
1.15	Site Information.	6
1.16	Sufficiency Of Documents Provided For Bidding	6
1.17	Examination Of Site Before Bidding	7
1.18	Hazardous Materials On Site.	7
1.19	Limitation On Claims Based On Contract Documents And Information	
	Provided For Bidding	7
ARTICLE 2	THE COLLEGE	8
2.1	General Rights And Responsibilities Of The College.	8
2.2	The College's Representative, Authority To Decide Contract Questions.	8
2.3	Required Approvals.	9
2.4	Information Required From The College.	9
2.5	Permits.	9
2.6	The College's Inspection Of The Project	9
2.7	The College's Inspectors, Duties And Limitations	10
2.8	The College's Rejection Of Defective Work	11
ARTICLE 3	THE ARCHITECT	11
3.1	The Architect's General Role.	11
3.2	The Architect's Access And Facilities	11
3.3	Limitation Of The Architect's Responsibilities.	11
3.4	The Architect's Rejection Of Work.	12
3.5	The Architect's Review Of The Contractor's Submittals	12

## TABLE OF CONTENTS (continued)

## Page

3.7       The Architect's Determination Of Substantial and Final Completion.       12         ARTICLE 4       THE CONTRACTOR.       12         4.1       The Contractor's Responsibility For Performance Of The Contract And Work.       12         4.2       The Contractor's Key Personnel.       13         4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       17         5.10       Losentruction Site Condition, Storage, Dust Control.       17         5.11       Construction Site Condition, Storage, Dust Co	3.6	The Architect's Review Of The Contractor's As-Built Plans	
ARTICLE 4       THE CONTRACTOR	3.7	The Architect's Determination Of Substantial and Final Completion	12
ARTICLE 4       THE CONTRACTOR       12         4.1       The Contractor's Responsibility For Performance Of The Contract And Work       12         4.2       The Contractor's Key Personnel.       13         4.3       The Contractor's Key Personnel.       13         4.4       Cooperation With The College And Other Contract Work/The Superintendent.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       16         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples)       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Soil Conservation.       19         5.13       Photographs.       1		-	
4.1       The Contractor's Responsibility For Performance Of The Contract And Work.       12         4.2       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       16         5.4       Working Hours.       16         5.5       Site Use.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Building Access.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       19       16 </td <td>ARTICLE 4</td> <td>THE CONTRACTOR</td> <td></td>	ARTICLE 4	THE CONTRACTOR	
4.1       The Contractor's Responsibility For Performance Of The Contract And Work.       12         4.2       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Building Access.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       19 <td< td=""><td>4.1</td><td>The Contractor's Degrangibility For Derformance Of The Contract And</td><td></td></td<>	4.1	The Contractor's Degrangibility For Derformance Of The Contract And	
WOLK.       12         4.2       The Contractor's Key Personnel.       13         4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Soil Conservation.       19         5.13       Photographs.       17         5.14       Project Sign.       19         5.15       Soil Conservation	4.1	Work	12
4.3       The Contractor's Supervision Of Contract Work/The Superintendent.       13         4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       16         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Construction Access, Roads, Walks, And Parking.       18         5.11       Construction Site Condition, Storage, Dust Control.       18         5.12       Construction Site Services, Electric, Heat And Enclosures.       19         5.13       Photographs.       18         5.14       Project Sign.       20         5.17       Subcontractor Version And Approval.       21         5.18       License Fe	12	WOIK	12
4.4       Cooperation With The College And Other Contractors.       13         4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       19       16         5.14       Project Sign       19       19         5.15       Soil Conservation.       19       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       20         5.18       Lic	43	The Contractor's Supervision Of Contract Work/The Superintendent	13
4.5       Performance Of The College Directives.       14         ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       18         5.14       Project Sign.       19         5.15       Soil Conservation.       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         6.18       License Fees.       20         6.17       Builto	4 4	Cooperation With The College And Other Contractors	13
ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       18         5.14       Project Sign.       19         5.15       Soil Conservation.       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20 <td>4 5</td> <td>Performance Of The College Directives</td> <td>13</td>	4 5	Performance Of The College Directives	13
ARTICLE 5       PERFORMANCE OF WORK.       15         5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Security.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       18         5.14       Project Sign.       19         5.15       Soil Conservation       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20 <td></td> <td>Terrormanee of the conege Directives</td> <td></td>		Terrormanee of the conege Directives	
5.1       Protection Of Work/Materials.       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       18         5.14       Project Sign.       19         5.15       Soil Conservation.       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         5.18       License Fees.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20         6.2       Subcontractor Identification And Approval.       21 <t< td=""><td>ARTICLE 5</td><td>PERFORMANCE OF WORK</td><td>15</td></t<>	ARTICLE 5	PERFORMANCE OF WORK	15
5.1       Foregrami of working Hoursmann       15         5.2       Safety And Safety Programs.       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Site Condition, Storage, Dust Control.       18         5.13       Photographs.       19         5.14       Project Sign.       19         5.15       Soil Conservation.       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20         6.2       Subcontractor Identification And Approval.       21         6.3       Subcontractor Compliance With Contract/Subcontractor Supervisors	5 1	Protection Of Work/Materials	15
5.2       Date y find starts       15         5.3       Emergencies Affecting Safety.       15         5.4       Working Hours.       16         5.5       Site Security.       16         5.6       Site Use.       16         5.7       Building Access.       16         5.8       Minimize Interruption.       16         5.9       Submittals (Shop Drawings, Product Data, Samples).       17         5.10       Layout And Dimensional Control.       17         5.11       Construction Access, Roads, Walks, And Parking.       18         5.12       Construction Access, Roads, Walks, And Parking.       18         5.13       Photographs.       18         5.14       Project Sign.       19         5.15       Soil Conservation.       19         5.16       Temporary Facilities, Services, Electric, Heat And Enclosures.       19         5.17       Substitutions.       20         6.1       The Contractor's Responsibility For Subcontracted Work.       20         6.1       The Contractor Identification And Approval.       21         6.3       Subcontractor Compliance With Contract/Subcontractor Supervisors.       22         6.5       No Contractual Relationship Between The C	5.1	Safety And Safety Programs	15
5.3       Entrogenetes function       16         5.4       Working Hours	53	Emergencies Affecting Safety	15
5.5Site Security.165.6Site Use.165.7Building Access.165.8Minimize Interruption.165.9Submittals (Shop Drawings, Product Data, Samples).175.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.20ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.5	Working Hours	15
5.6Site Use.165.7Building Access.165.8Minimize Interruption.165.9Submittals (Shop Drawings, Product Data, Samples).175.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5 5	Site Security	10
5.7Building Access.165.8Minimize Interruption.165.9Submittals (Shop Drawings, Product Data, Samples).175.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.6	Site Use	
5.8Minimize Interruption.165.9Submittals (Shop Drawings, Product Data, Samples).175.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.7	Building Access.	
5.9Submittals (Shop Drawings, Product Data, Samples).175.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.8	Minimize Interruption	
5.10Layout And Dimensional Control.175.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.9	Submittals (Shop Drawings, Product Data, Samples).	17
5.11Construction Access, Roads, Walks, And Parking.185.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.10	Layout And Dimensional Control.	17
5.12Construction Site Condition, Storage, Dust Control.185.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.11	Construction Access, Roads, Walks, And Parking.	
5.13Photographs.185.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.12	Construction Site Condition, Storage, Dust Control	
5.14Project Sign.195.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.20ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.13	Photographs	
5.15Soil Conservation.195.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.20ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.14	Project Sign	19
5.16Temporary Facilities, Services, Electric, Heat And Enclosures.195.17Substitutions.205.18License Fees.20ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.15	Soil Conservation	
5.17Substitutions	5.16	Temporary Facilities, Services, Electric, Heat And Enclosures	19
5.18License Fees.20ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.17	Substitutions	
ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work.206.2Subcontractor Identification And Approval.216.3Subcontractor Qualifications.216.4Subcontractor Compliance With Contract/Subcontractor Supervisors.226.5No Contractual Relationship Between The College And Subcontractors.22	5.18	License Fees	
ARTICLE 6SUBCONTRACTORS206.1The Contractor's Responsibility For Subcontracted Work206.2Subcontractor Identification And Approval216.3Subcontractor Qualifications216.4Subcontractor Compliance With Contract/Subcontractor Supervisors226.5No Contractual Relationship Between The College And Subcontractors22			
<ul> <li>6.1 The Contractor's Responsibility For Subcontracted Work</li></ul>	ARTICLE 6	SUBCONTRACTORS	
<ul> <li>6.2 Subcontractor Identification And Approval</li></ul>	6.1	The Contractor's Responsibility For Subcontracted Work	
<ul> <li>6.3 Subcontractor Qualifications</li></ul>	6.2	Subcontractor Identification And Approval.	
<ul> <li>6.4 Subcontractor Compliance With Contract/Subcontractor Supervisors</li></ul>	6.3	Subcontractor Qualifications.	
6.5 No Contractual Relationship Between The College And Subcontractors	6.4	Subcontractor Compliance With Contract/Subcontractor Supervisors	
· · ·	6.5	No Contractual Relationship Between The College And Subcontractors	
6.6 Contingent Assignment of Subcontracts	6.6	Contingent Assignment of Subcontracts	22

# TABLE OF CONTENTS

## (continued)

ARTICLE 7	TIME, LIQUIDATED DAMAGES, DELAY CLAIMS AGAINST THE COLLEGE	23
71	Contract Times	23
7.1	Liquidated Damages For Delay	23
7.2	Delay Claims By The Contractor Against The College Limitations	23
1.5	Denty channes by The Contractor Arguinst The Conege – Eminations.	23
ARTICLE 8	PROJECT SCHEDULE	24
8.1	General Project Schedule Requirements.	24
8.2	Form And Content Of Project Schedule.	24
8.3	Computerization Of Project Schedule.	26
8.4	Weather Inclusion In Project Schedule.	26
8.5	Project Schedule Updates.	26
8.6	Meetings/Eight Week Bar Charts.	27
8.7	Project Schedule Documentation For Contract Payments.	27
8.8	Progress and Recovery Project Schedules.	28
8.9	The Contractor's Failure to Provide Project Schedule Updates.	28
8.10	Scheduler Qualifications.	28
ARTICLE 9	EXTENSIONS, COMPENSATION FOR CERTAIN EXTENSIONS	28
9.1	Delays Warranting Extensions Of Contract Times	28
9.2	Weather Delays	29
9.3	Float Time Use	29
9.4	Calculation Of Extensions.	29
9.5	Elimination of Delays and Extensions (Acceleration)	30
9.6	Requests For Extensions Required.	30
9.7	Compensation For Certain Extensions And Limitations.	30
ARTICLE 10	PAYMENTS TO THE CONTRACTOR	31
10.1	Contract Price	31
10.2	Monthly Progress Payments.	
10.3	Unit Schedule Breakdown/CPM Activity Price Breakdown	32
10.4	Invoices For Monthly Progress Payments: Form and Content	32
10.5	Payment For Materials And Equipment Procured But Not Installed	33
10.6	Retainage	34
10.7	Payment For Change Order Work.	
10.8	Final Payment	
10.9	Pavment Terms.	34
10.10	Payment Based On Partial Acceptance (Limitation).	35
10.11	Failure To Pay Amounts In Dispute Not To Affect Performance.	35
10.12	Reasons For Withholding Payment.	35

## TABLE OF CONTENTS (continued)

## Page

10.13	Set-Off For State Tax Indebtedness.	36
10.14	Maintenance Of Cost And Accounting Records.	36
10.15	Written Evidence of Payment to Subcontractors	37
ARTICLE 11	CHANGES	37
11.1	Changes Authorized.	37
11.2	Change Request Or Directive.	37
11.3	Change Orders Which Are Protested.	38
11.4	Changes Affecting Contract Times.	38
11.5	Contractor Initiated Change Order Requests.	38
11.6	Change Order Amounts.	39
11.7	Right To Audit Extra Costs (Before And After Payment)	40
11.8	Change Orders With Both Price Increases and Decreases	40
11.9	Waiver Of Rights In Connection With Change Orders Issued Without	
	Protest.	40
ARTICLE 12	COMPLETION	40
12.1	Substantial Completion	40
12.1	Final Completion	<del>-</del> 0 41
12.2		. 11
ARTICLE 13	SUSPENSION AND TERMINATION OF CONTRACT.	42
13.1	Suspension By The College.	42
13.2	Termination For Convenience.	43
13.3	Termination For Cause.	44
13.4	Surety Takeover Following Termination For Cause.	45
13.5	Suspension By The Contractor For Non-Payment	45
ARTICLE 14	WARRANTY/DEFECTIVE WORK AND MATERIALS	46
1/1 1	General Work One Vear Warranty: HVAC Systems Two Vear Warranty	46
14.1	Defective Work Materials And Equipment	+0
14.2	Defective work, Materials And Equipment.	. 4/
ARTICLE 15	INDEMNIFICATION/LIABILITY TO THIRD PARTIES	47
15.1	The Contractor's Indemnification Obligation	47
15.2	The Subcontractor's Indemnification Obligation.	49
ARTICLE 16	INSURANCE AND BONDS.	49
16.1	The Contractor's Insurance	⊿0
16.1	The Subcontractor's Insurance	. <del>.</del> 51
16.2	Payment And Performance Rond	. J1 51
10.5	r ayment And Ferrormanee Donu	1

## TABLE OF CONTENTS (continued)

## Page

ARTICLE 17	DISPUTE RESOLUTION.	. 51
17.1	Mediation.	. 51
17.2	Method Of Binding Dispute Resolution.	. 51
17.3	Arbitration (If The College Elects To Arbitrate).	. 51
17.4	Consolidation Or Joinder.	. 52
17.5	Work During Pendency Of Dispute.	. 52
17.6	Prompt Payment Claims	. 53
17.7	The Contractor's Claims: Procedures And Limitations.	. 53
17.8	Dispute Resolution Process In The Contractor's Subcontracts	. 53
ARTICLE 18	MISCELLANEOUS.	. 53
10 1	Provailing Wago	52
10.1	Employment Discrimination	
18.2	Datente	55
18.3	The Contractor's Compliance With Law	. 55
18.5	Environmental Protection The Contractor's Duty To Comply With	. 55
10.5	Applicable I aw	56
18.6	No Personal Liability Of College Officials	56
18.7	Recovery Of Monies By The College From Other Contracts With The	
10.7	Contractor	56
18.8	Buy American Requirement.	. 56
18.9	Compliance With Grant Requirements.	. 57
18.10	Modification Of Contract.	. 57
18.11	State Sales Tax Exemption.	. 57
18.12	Successors and Assigns.	. 57
18.13	Construction Liens.	. 57
18.14	Independent Contractor Status.	. 58
18.15	Third Party Beneficiary Rights Not Intended.	. 58
18.16	Gifts To College Employees And Agents Prohibited.	. 58
18.17	Compliance With Procurement Statutes.	. 58
18.18	Conflict Of Interest.	. 59
18.19	Confidential Information.	. 60
18.20	Publicity.	. 60

#### 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:

<u>Addendum</u>: 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.

<u>Architect</u>: 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.

<u>Bulletin</u>: 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).

<u>Change Order Proposal or Change Order Request</u>: 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 Contract or in writing, it will become part of the Contract as a change order.

<u>The College's Representative</u>: 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.

<u>College Site Superintendent:</u> 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.

<u>Contract</u>: 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.

<u>Contract Amendment:</u> 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.

<u>Contract Change Directive (CCD)</u>: 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.

<u>Contract Documents:</u> The Contract Documents are enumerated in Article 2 of the Contract for Construction.

<u>Contract Limit Lines:</u> 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.

<u>Contracting Officer</u>: 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.

<u>Field Order (FO)</u>: 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.

<u>Plans:</u> 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.

<u>Project:</u> 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.

<u>Specifications</u>: 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.

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

<u>Work:</u> 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 thePlans 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 resultin 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 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 preexisting 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 writtendecision 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 ormaterials 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 ContractDocuments 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 byreason 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 SiteSuperintendent.

## 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 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. TheContractor shall also comply with any inspection and testing procedures specified in the ContractDocuments.

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 be to 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 theseGeneral 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 doso.

## 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 rear 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 failureto 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 itsapproval 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 competentand licensed New Jersey engineer or land surveyor as appropriate to perform all layout Work andto 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 theArchitect, 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 onit 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 aprofessional 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 theProject Specifications. The Contractors 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 conditioningsystem 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 andshall 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 ofWork 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 orduties between 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 directlyagainst 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 <u>N.J.S.A.</u> 2A:58B-3 (delayed performance caused by the College's own negligence, bad faith, active interference or other tortuous 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 theContract 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 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).
- (1) 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 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 progressmeetings, the Contractor shall provide a look ahead summary and detailed bar charts showing theWork 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 ProjectSchedule 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 fallenbehind the Project Schedule so as to jeopardize the achievement of Milestone, SubstantialCompletion 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.

## <u>ARTICLE 9</u> 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 acceptin 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 theburden of proof with respect to weather delays shall be upon Contractor. No time extensionswill 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 timeshown 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 shallperform 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 toeach, and suggestions or proposals to reduce or eliminate the delay. This limited time frame is toprovide the College the opportunity to immediately address the issue and limit the amount oftime 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 Articleshall 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 GeneralConditions 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 topay 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 otherdocuments that the Contractor is required by the Contract Documents to provide to the College atthe time of Final Completion. The final invoice must also include a written signed consent to thefinal 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 responsiblebecause 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 <u>N.J.S.A.</u> 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 <u>N.J.A.C.</u> 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.

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 theoverpayment 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 paidSubcontractors 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 checksmade payable jointly to the Contractor and a Subcontractor; however, by doing so, the College isnot undertaking any obligation on the part of the Contractor, nor does the Subcontractor have anyclaims 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 9of 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 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 becompleted 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 agreesthat 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 ContractDocuments 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 inwriting and list the incomplete or unsatisfactory items. The Contractor shall immediatelycomplete 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 additionalcompensation 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 any extension under and to the extent authorized in Article 9, and additional compensation under and to the extent authorized 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 bythe College. When the Contract is terminated, the Contractor shall deliver materials purchasedfor 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 form 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 ornot 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 theContractor, 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 forthe Contractor or Subcontractor under workers' compensation acts, disability benefit acts orother 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 afterthe Final Completion and acceptance of the Project. This insurance shall be written for not less than the limits set forth below or as required by law, whichever coverage is greater, and shall include contractual liability insurance applicable to the Contractor's obligations under Article 15 (Indemnification). The Contractor expressly agrees that any insurance protection required by the Contract Documents shall in no way limit the Contractor's obligations under the Contract, and shall not be construed to relieve the Contractor from liability in excess of such coverage. Nor shall it preclude the College from taking such actions as are available to it under any other provisions of the Contract for Construction, these General Conditions or the law.

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

- (a) Commercial General Liability Insurance (CGL). Commercial General Liability insurance ISO CG 00 01 12 07 or later occurrence form of insurance including contractual liability with limits of at least \_\_\_\_\_ million dollars (\$\_\_\_\_\_\_) per occurrence, and at least \_\_\_\_\_ million dollars (\$\_\_\_\_\_\_) in the aggregate. The general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. The CGL policy shall also include products/completed operations with limits of at least \_\_\_\_\_\_ million (\$\_\_\_\_\_\_) in the aggregate. 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 \_\_\_\_ million dollars (\$\_\_\_\_\_) combined single limit for bodily injury and property damagefor each occurrence.

(c) Workers Compensation/ Employer's Liability. Worker's Compensation Insurance applicable to the laws of the State of New Jersey and other Stateor Federal jurisdictions required to protect the employees of the Contractorand any Subcontractor, sub-subcontractor or supplier who will be engaged in the performance of the Contract. The certificate must so indicate that noproprietor, partner, executive officer or member is excluded. This insurance shall include Employers' Liability Insurance with a limit of liability not less than one million dollars (\$1,000,000) bodily injury, each occurrence, one million dollars (\$1,000,000) disease, each employee, and one million dollars (\$1,000,000) disease, aggregate limit.

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

**16.1.2 Additional Insureds.** All insurance required herein, except Worker' 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 thepolicies 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 <u>N.J.S.A.</u> 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 bythe surety disclosure statement and certification required by <u>N.J.S.A.</u> 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 arbitrationshall 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 ifcomplete 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 orentity 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 <u>N.J.S.A.</u> 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, <u>N.J.S.A.</u> 59:13-1, <u>et seq.</u>, 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, <u>N.J.S.A</u>. 59:13-1, <u>et seq.</u>, including the notice and time for suitprovisions. 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.

#### <u>ARTICLE 18</u> MISCELLANEOUS.

#### **18.1 Prevailing Wage.**

The Contractor and its Subcontractors shall comply with the New Jersey Prevailing Wage Act, <u>N.J.S.A.</u> 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 <u>N.J.S.A.</u> 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 <u>N.J.S.A.</u> 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 <u>et seq.</u>), 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'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 <u>N.J.S.A.</u> 10:2-1 through 10:2-4 and <u>N.J.S.A.</u> 10:5-1 <u>et seq.</u>, including <u>N.J.S.A.</u> 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 <u>N.J.A.C.</u> 17:27-7.4 concerning thefinancing of minority and women outreach and training programs, the College reserves the rightsto 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 allmoney 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 othercontracts 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 rightsagainst the Contractor or surety under the Contract.

# **18.8** Buy American Requirement.

The Contractor shall comply with <u>N.J.S.A.</u> 52:32-1 and <u>N.J.S.A.</u> 52:33-1 <u>et seq.</u>, 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 particularthe provisions of <u>N.J.S.A.</u> 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 uncarned 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 anyState 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, asdefined 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 employeehas 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 Statevendor 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, anyState 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 servicesby 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 theExecutive 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.