

**PROJECT SPECIFICATIONS**

**FOR:**

**CAMDEN COUNTY COLLEGE  
SMOKE TOWER STRUCTURE**

REGIONAL EMERGENCY TRAINING CENTER  
420 NORTH WOODBURY-TURNERSVILLE ROAD  
BLACKWOOD, NEW JERSEY 08012

**PREPARED FOR**

**CAMDEN COUNTY COLLEGE**  
PO BOX 200, 200 COLLEGE DRIVE  
135 ROOSEVELT HALL  
BLACKWOOD, NEW JERSEY 08012

**PREPARED BY**



304 White Horse Pike, Haddon Heights, NJ 08035  
(856) 546-8611 • Fax (856) 546-8612

**MAY 30, 2024**



**Steven M. Bach, PE, RA, PP, CME**  
NJ Professional Engineer No. GE 41507  
Bach Project No. CCC2023-1

## **PROJECT TITLE PAGE**

### **OWNER**

Camden County College  
PO Box 200, 200 College Drive  
135 Roosevelt Hall  
Blackwood, New Jersey 08012  
Telephone: (856) 227-7200

### **ARCHITECT**

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304 White Horse Pike  
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END OF SECTION

## LIST OF DRAWING SHEETS

The following contract drawings are herein made part of the project specifications:

- C-1 COVER SHEET AND INDEX OF DRAWINGS
- SP-1 SITE PLAN AND DETAILS
- A-1 FLOOR PLANS
- A-2 FOURTH FLOOR AND ROOF PLANS AND DETAILS
- A-3 ELEVATIONS AND DETAILS
- A-4 ELEVATIONS AND DETAILS
- S-1 FOUNDATION PLAN
- S-2 FOUNDATION DETAILS
- EC1 ELECTRICAL COVER SHEET
- E-1.0 ELECTRICAL LOCATION PLAN
- E-2.0 ELECTRICAL SINGLE LINE AND SCHEDULES

END OF SECTION

## LEGAL NOTICE TO BIDDERS

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Notice is hereby given that Camden County College, P. O. Box 200, 200 College Drive, Blackwood, New Jersey 08012 invites proposals for a **single overall contract** in accordance with NJSA 18A:64A-25.25 for bid #FY24ITB-68 **Camden County College Regional Emergency Training Center Smoke Tower Structure**.

Sealed bid proposals will be received up to **2:00 p.m.** prevailing time on **Thursday, July 18, 2024** in the Purchasing Department at the Roosevelt Hall Building #6, Room 135, Camden County College, Blackwood Campus, and will be publicly opened and read aloud shortly thereafter in the Purchasing Department, (856) 227-7200, extension 4351.

All Bidders are highly encouraged to attend, either in person or by representative, a pre-bid conference to be held in the **Regional Emergency Training Center, Conference Room, which is located at 420 North Woodbury-Turnersville Road, Blackwood, NJ 08012 on Tuesday, June 18, 2024 at 2:30 p.m.**

Each Bidder shall submit a bid bond to the benefit of Camden County College in the amount of 10% of the total bid price. The successful Bidder will be required to furnish a New Jersey Statutory Form of Performance Bond and Labor and Material Payment Bond in the amount of 100 percent of the contract price. Each Bidder will be required to furnish additional evidence of performance security with each bid pursuant to N.J.S.A. 18A-64A-25.17 and compliance with N.J.S.A. 18A-64A-25.25.

Bidding and Contract Requirements, Bid Forms, Specifications and Contract Drawings and other Contract Documents may be examined during normal office hours at Architect's Office, Bach Associates, PC304 White Horse Pike, Haddon Heights, NJ 08035.

Hard copies of the bid documents may be picked up from Bach Associates, PC, by prospective bidders upon request. PDF copies of the bid documents on a CD may be picked up from Bach Associates, PC, by prospective bidders upon request at no charge. Digital copies of the bid documents maybe requested by emailing [Bids@bachdesigngroup.com](mailto:Bids@bachdesigngroup.com), provide **Camden County College Smoke Tower Structure** in the subject line.

Bid forms, contract forms, Drawings and Project Manual/Specifications are on file and may be examined in the Purchasing Department at Camden County College or the Architect. No bid may be withdrawn for a period of 60 days after the opening date. The Owner reserves the right to waive any or all informalities in any bid or bids, to reject any or all bids, and to accept such bid or bids, and to make such awards as may be in the Owner's best interest and in accordance with the law.

Persons or firms bidding on equipment that requires installation by the contractor are advised that those provisions of Chapter 150, Laws of 1963 (N.J. Prevailing Wage Act) will apply to and be part of all such contracts.

Proposals must be made upon and in accordance with the form of bid accompanying the specifications. Bid security as provided in the specifications shall accompany each bid. Bidders are required to comply with the requirements of P.L. 1975 Chapter 127 (N.J.A.C. 17:27), P.L. 77, C.33 and N.J.S.A. 10:5-31 et seq.

Bidders for contracts exceeding \$20,000 must be pre-qualified by the New Jersey Department of Treasury, Division of Property Management and Construction. Each bid must be accompanied by an affidavit so certifying, if applicable.

Dated this: **10<sup>th</sup> of June, 2024**

Board of Trustees  
Camden County College  
By: Melissa Manera  
Purchasing Department

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**CAMDEN COUNTY COLLEGE  
PURCHASING DEPARTMENT  
ROOSEVELT HALL ROOM 135  
200 COLLEGE DRIVE BLACKWOOD, NEW JERSEY 08012  
(856) 227-7200**

DATE: **May 30, 2024**

Bid No. and Title: **FY24ITB-68 - Camden County College - Regional Emergency Training Center – Smoke Tower Structure**

BIDS MUST BE RETURNED NO LATER THAN **2:00 PM**, PREVAILING TIME ON **JULY 18, 2024** TO CAMDEN COUNTY COLLEGE, ROOSEVELT HALL ROOM 135, 200 COLLEGE DRIVE, BLACKWOOD, NEW JERSEY 08012. The Camden County College hours and days of operation are as follows: Monday through Friday, 9:00 AM to 4:30 PM. It is strongly recommended you contact the College before delivering your bid to Camden County College.

1. PRICES MUST INCLUDE DELIVERIES TO ALL SITES SET FORTH HEREIN.
2. All Requests for Information (RFI) must be submitted by email to Mr. Dirk Muits at [dmuits@bachdesigngroup.com](mailto:dmuits@bachdesigngroup.com) by Monday, June 24, 2024 by 4:00 PM.
3. Quotations must be made on these sheets. Camden County College is not responsible for any expenses incurred by any firm in preparing or submitting a bid proposal.
4. Prices may be submitted on any or all the items listed unless otherwise specified. Award of contract for goods and services will be made based on the lowest responsible bid on each item or on an aggregate basis, whichever is in the best interest of Camden County College.
5. Insert NET UNIT PRICES. Bids must be firm for a minimum of 60 days. Contract prices may not be increased during the term of the contract.
6. Camden County College is exempt from sales tax.
6. Camden County College reserves the right to accept or reject any part or parts of the responses to this bid in accordance with law.
7. To the extent that any of these instructions directly contradict the bid specifications, the bid specifications shall prevail.
8. Camden County College shall only be responsible for the payment of interest or late fees as provided pursuant to N.J.S.A. 2A:30A-2(c).
9. Official College bid packages for routine goods and services are available from the Camden County College Purchasing Department at no cost to the vendor. All addenda are issued by the Division of Purchasing. **Potential bidders are cautioned that they are bidding at their own risk if a third party supplied the bid specifications.** Such specifications may or may not be complete. The College is not responsible for third party supplied bid specifications.
10. Bidders are required to comply with the requirements of P.L. 1999, c. 238 (N.J.S.A. 34:11-56.25 et seq.) regarding prevailing wages, where applicable.



11. Bidders are hereby noticed that the College shall correct certain types of clerical errors if found in submitted bids. For example, if the quantity needed or the standard unit of measurement used, times the unit price, is incorrectly calculated in reaching a total or final price, the College will correct the computational mistake.
12. The College requires bidders to list any exceptions to the bid specifications. For any exceptions listed the College shall determine if it will accept an immaterial, or minor, deviation from its bid specifications as permitted by law. Material exceptions shall be cause for rejection of the bid. Bidders shall not be permitted to remove listed exceptions.
13. N.J.S.A. 40A:11-2.1 and 52:32-55 prohibits State and local public contracts with persons or entities engaging in certain investment activities in energy or finance sectors of Iran.
14. Official notification of contract awards authorized by the College may be viewed on camdencc.edu. To review, click on the "About" tab, scroll to the "Board of Trustees" information box. Meetings, agendas and summary of actions are found here and click on "Summary of Actions" for the month you would like to view. Copies of resolutions and bid results require an OPRA request. See camdencc.edu for OPRA form and process.
15. Should any requirements or language contained in the contract documents/technical specifications be found to conflict with the College's general bid boilerplate (ITB pages), the requirements/language in the bid boilerplate shall prevail.
16. BIDDERS ARE REQUIRED TO USE THE COLLEGE'S FORMS AND SHALL NOT RECREATE IN ANY WAY THE FORMS PROVIDED WITH THIS BID. FAILURE TO USE THE COLLEGE FORMS OR ADDING TO, AMENDING, ALTERING, OR REVISING THE COLLEGE FORMS, INCLUDING, BUT NOT LIMITED TO, CONVERTING THE COLLEGE PDF OR HARDCOPY TO A WORD DOCUMENT, SHALL BE CAUSE FOR REJECTION OF THE BID.

WE SUBMIT HEREWITH our prices as indicated on the following bid.

Submitted on \_\_\_\_\_, 20\_\_\_\_\_ BY \_\_\_\_\_  
(Name of Company)

Fax No. \_\_\_\_\_ PER \_\_\_\_\_  
(Signature and Title of Authorized Representative)

E-Mail: \_\_\_\_\_ Phone No. \_\_\_\_\_

## BIDDER'S CHECKLIST

**THIS BIDDER'S CHECKLIST MUST BE COMPLETED, SIGNED AND SUBMITTED WITH YOUR BID PACKAGE.**

1. Bid Guarantee deposit in the form of a certified check, cashier's check or bid bond. See Paragraph 4.1 and **Exhibit A**. (Must be submitted with bid) \_\_\_\_\_
  
2. Certificate from a Surety Company or Financial Institution stating that if bid is accepted, they will provide the required performance bond or Letter of Credit. See Paragraphs 4.2, 8.1 and 8.2, and **Exhibits B, C, and D**. (Must be submitted with bid, **must include originals – copies will not be accepted**) \_\_\_\_\_
  
3. Statement of Corporate Ownership listing the names and addresses of all individuals owning ten percent (10%) or more of corporation, partnership or LLC. See **Exhibit E**. (Must be submitted prior to or with bid) \_\_\_\_\_
  
4. Non-collusion Affidavit properly notarized. See **Exhibit F**. \_\_\_\_\_
  
5. Affirmative Action Questionnaire with available evidence submitted. See Paragraph 5 and **Exhibit I**. \_\_\_\_\_
  
6. Affirmative Action MBE/WBE Tracking Form. See Paragraph 5 and **Exhibit J**. \_\_\_\_\_
  
7. Debarment Certification Form. **Federal Public Works contracts only**. See **Exhibit K**. \_\_\_\_\_
  
8. Extension or Non-Extension of Prices to Registered System Members (Other Agencies) See Paragraph 22.1 and **Exhibit L**. \_\_\_\_\_ N/A
  
9. **Textile/Apparel Subcontractor Disclosure Requirements**  
  
**For Bids for Textiles and/or Items of Apparel Only.** Disclosure of all subcontractors and sites and Certification of Compliance for textile and apparel bids. See Paragraphs 23.1 and Paragraph 23.2 and **Exhibit M**. (Must be submitted with bid). \_\_\_\_\_ N/A

**[BIDDER'S CHECKLIST CONTINUED NEXT PAGE]**

**BIDDER'S CHECKLIST (cont'd)**

- 10. Proof of compliance with The Public Works Contractor Registration Act, if applicable. See Paragraph 24. (Must be submitted prior to award of contract). \_\_\_\_\_
  
- 11. Construction Subcontractor Disclosure Requirements
  - a. **For Bids for Construction Only.**  
Disclosure of subcontractors as required by N.J.S.A. 40A:11-16. See Paragraph 26 and **Exhibit N.** (Must be submitted with bid). \_\_\_\_\_
  
- 12. Proof of compliance with the State Contractor Business Registration Program. See Paragraph 31. \_\_\_\_\_
  
- 13. Acknowledgement of Receipt of Addenda, whether or not issued, N.J.S.A. 40A:11-23.2. See Paragraph 32 and **Exhibit Q.** (Form must be submitted with bid). \_\_\_\_\_
  
- 14. Uniformed Law Enforcement Officer requirement form. **Exhibit R.** \_\_\_\_\_ N/A \_\_\_\_\_
  
- 15. Certification - Disclosure of Investment Activities in Iran **Exhibit S.** (Must be submitted prior to award of contract). \_\_\_\_\_
  
- 16. Certification of non-involvement in prohibited activities in Russia or Belarus. **Exhibit T.** (Must be submitted prior to award of contract). \_\_\_\_\_

\_\_\_\_\_  
**NAME OF BIDDER**

\_\_\_\_\_  
**SIGNATURE**

\_\_\_\_\_  
**DATE**

## INSTRUCTIONS TO BIDDERS

1. **RECEIPT, OPENING, WITHDRAWAL OF BIDS, AND FAILURE TO RESPOND**
  - 1.1 Sealed Bids will be received by the College on the date, time, location, and in the manner as listed in the advertisement.
  - 1.2 Bids must be received at the Camden County College Purchasing Department in Roosevelt Hall, Room 135, 200 College Drive, Blackwood, New Jersey 08012 as stipulated in the advertisement no later than the due date and time indicated therein. It is recommended that bids be hand delivered to that department. The College assumes no responsibility for delays in any form of courier or mail order delivery service causing the bid to be received at the department stipulated later than the due date and time. All late bids will be rejected in accordance with the law.
  - 1.3 Any bid may be withdrawn prior to the time for openings of bids or the authorized postponement thereof. Any bid received after the opening of bids will not be considered. No bidder may withdraw a bid within sixty (60) days after the actual opening thereof.
2. **QUALIFICATION OF BIDDERS**
  - 2.1 The College may make such investigation as it deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the College all such information and data for this purpose as the College may request. The College reserves the right to reject any bids if the evidence submitted by, or investigation of such bidder, fails to satisfy the College that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated herein.
3. **PREPARATION OF BID**
  - 3.1 **Bids must be submitted on the prescribed form. ONE ORIGINAL (1) AND TWO (2) COPIES** of the bid should be submitted. The bidder shall fill in all blank spaces in ink or by typewriter, both in words and figures. Bids must be signed in ink by authorities with capacity to legally bind the bidder to its bid proposal.
  - 3.2 Each bid shall be based upon the specifications prepared by the College. The bidder accepts the obligation to become familiar with the College's specifications.
  - 3.3 Each bid must give the full business address of the bidder and be signed by an authorized representative. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed in the legal name of the corporation, followed by the name of the State of Incorporation and must contain the signature and designation of the President, Secretary or other person authorized to bind the corporation in the matter. When requested by the County, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished.
  - 3.4 Bids containing any conditions, omissions, unexplained erasures or alterations, items not called for in the proposal form, attachment or additive information not required by the bid documents, or irregularities of any kind, may be rejected by the County. Any

changes, white-outs, strike-outs, etc. on the proposal page must be clear as to meaning and initialed by the person responsible for signing the bid. The College reserves the right to waive any minor informalities in the bids received as permitted by law or reject bids under certain circumstances as permitted by law.

- 3.5** All bids must be submitted in sealed envelopes bearing on the outside the name of the bidder, address and subject and title of the specifications. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope, addressed as set forth in the advertisement. The College assumes no responsibility for mailings not received on time at the department stipulated in the advertisement to receive bids. It is therefore recommended that bids be hand delivered.
- 3.6** Bidders must insert prices for furnishing all the materials and/or labor required by these specifications whether such requirement is specifically set forth. Prices shall be net, including any charges for packing, crating, containers, etc. and all transportation charges fully pre-paid by the contractor F.O.B. destination and placement at locations specified by the County. No additional charges will be allowed for any transportation costs resulting from partial shipments made at the contractor's convenience when single shipment is ordered.
- 3.7** Payments will be made upon the approval of vouchers submitted by the successful bidder in accordance with the requirements of the Board of Commissioners and subject to the College's customary billing procedures.
- 3.8** The College reserves the right to grant up to three (3) business days' additional time to bidders after the bid opening to provide the following documents required by the bid specifications:
  - a. Non-collusion affidavit. See **Exhibit F**;
  - b. Affirmative Action Questionnaire with available evidence submitted. See Paragraph 5 and **Exhibit I**;
  - c. Affirmative Action Plan MBE/WBE Tracking Form. See Paragraph 5 and **Exhibit J**;
  - d. Debarment Certification Form – for Federal Contracts – Public Works only. See **Exhibit K**.

Such additional time may not in any way affect the price or cost of the bid. All other documents required by the bid specifications must be submitted at the time of the bid opening specified herein or in accordance with law.

#### **4. BID BOND/CONSENT OF SURETY OR LETTER OF CREDIT**

##### **4.1 BID BOND**

Each bid must be accompanied by the Certified Check of the bidder or by a Cashier's Check, or by a Bid Bond prepared on the form of bid bond attached hereto as **Exhibit A**, duly executed by the bidder as principal, having surety thereon, a surety company approved by the College, in an amount not less than ten percent (10%) of the amount of the base bid submitted, said 10% not to exceed \$20,000.00 pursuant to N.J.S.A.

40A:11-21, payable to Camden County College. Only originals submitted on the College's form Exhibit A will be accepted.

#### 4.2 CONSENT OF SURETY OR LETTER OF CREDIT

In addition, the bid must also be accompanied by a Certificate (Consent of Surety) from a Surety Company stating that it will provide said bidder with a Performance Bond in the full amount of the bid. College forms are required to be used. A form of Consent of Surety is attached hereto as **Exhibit B**. Only originals submitted on the College's form Exhibit B will be accepted. A form of Performance Bond is attached hereto as **Exhibit C**. **Exhibit C must be signed by the successful bidder and bidder's surety after award of contract and must be returned with the contract.** As an alternative to the consent of surety, bidders may provide a letter from a bank or similar financial institution stating that it will issue a Letter of Credit in the full amount of the bid and pursuant to the terms of the Letter of Credit in the specifications (See **Exhibit D**). **This Letter of Credit option is not available on bids exceeding \$100,000. Such bids require a Consent of Surety/Performance Bond. See N.J.S.A. 40A:11-22.**

4.3 Per N.J.S.A. 40A:11-24(a), All bid security, except the security of the three apparent lowest responsible bidders, shall be returned, unless otherwise requested by the bidder, within ten (10) days after the opening of bids, **Sundays and holidays excepted**, and the bids of such bidders shall be considered as withdrawn. Within three (3) days, **Sundays and holidays excepted**, after the awarding and signing of the contract, and the approval of the contractor's performance bond, the bid security of the remaining unsuccessful bidders shall be returned to them.

4.4 In accordance with N.J.S.A. 40A:11-14 the College requires the bid bond and consent of surety in the form provided herein on Exhibit A and Exhibit B. No other forms shall be accepted and failure to provide a bid bond and consent of surety on the College form, when required by the bid, shall be cause to reject the bid.

#### 5. AFFIRMATIVE ACTION

5.1 The successful bidder shall adhere to the mandatory affirmative action language required by P.L. 1975, c.127 (N.J.A.C. 17:27) and N.J.S.A. 10:5-31 et seq.

5.2 For procurement, professional and service contracts, the above-referenced mandatory language shall be that set forth in **Exhibit G**.

5.3 For construction contracts, the above-referenced mandatory language shall be that set forth in **Exhibit H**.

5.4 All bidders should complete the Affirmative Action Questionnaire set forth in **Exhibit I** and follow its instructions.

5.5 All bidders should complete the Affirmative Action Plan MBE/WBE Tracking Form in **Exhibit J**.

## **6. ADDENDA AND INTERPRETATIONS**

- 6.1** No interpretation of the meaning of any bid document will be made to any bidder orally. Any request for interpretation shall be in writing, addressed to the College's representative stipulated in the bid and must be received at least ten (10) days prior to the date fixed for the opening of bids. All such interpretations and any supplemental instructions will be in the form of written addenda to the specifications and will be distributed to all prospective bidders in accordance with N.J.S.A. 40A:11-23. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

## **7. MISCELLANEOUS**

- 7.1** At the time of the opening of bids, each bidder will be presumed to have read and to be thoroughly familiar with the specifications and all other bid documents (including addenda). The failure or omission of any bidder to receive or examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to his bid.
- 7.2** In case of default by the successful bidder, Camden County College may procure the articles or services from other sources and hold the successful bidder responsible for any excess cost occasioned thereby.
- 7.3** Camden County College is exempt from any State sales tax and Federal excise tax. In submitting this bid, the bidder certifies that its total bid price does not include any such taxes.
- 7.4** For purposes of evaluation where an equivalent is being furnished, the bidder must indicate any variation to the College's specifications no matter how slight. If no variations are indicated, it will be construed that the bid fully and exactly complies with the College's specifications.
- 7.5** All bids submitted shall include in price any applicable permits, or fees required by any other government entity that has jurisdiction to require the same.
- 7.6** In submitting its bid, the bidder certifies that the merchandise to be furnished will not infringe upon any valid patent or trademark and that the successful bidder shall, at its own expense, defend all actions or suits charging such infringement, and will save the College harmless from any damages resulting from such infringement.
- 7.7** The bidder understands and agrees that, if awarded any contract by Camden County College, it shall be responsible for insuring that it and all subcontractors meet minimum safety, health and equipment requirements including provisions for protecting employees and the public from any hazards encountered in performing its obligations pursuant to this bid.
- 7.8** All Firms are advised that, pursuant to N.J.S.A. 19:44A-20.27, it is their responsibility to file an annual disclosure statement with the New Jersey Election Law Enforcement Commission ("ELEC") if, during the calendar year, they receive a contract(s) in excess of

\$50,000 from public entities, including Camden County College. It is the firm's responsibility to determine if such filing is necessary. Additional information on this requirement is available from ELEC at 888-313-3532.

## **8. SECURITY FOR FAITHFUL PERFORMANCE**

- 8.1** Simultaneously with its delivery of the executed contract, the successful bidder shall deliver to the College an executed bond in the amount of one hundred percent (100%) of the accepted bid as security for the faithful performance of this contract and for the payment of all persons performing labor or furnishing materials in connection therewith, prepared in the form of contract bond attached hereto and having a surety thereon such surety company or companies as are acceptable on bonds approved by the College, and as are authorized to transact business in this State.
- 8.2** In the event the successful bidder chooses to supply a Letter of Credit in lieu of the performance bond required by Section 8.1 above, said Letter of Credit shall be delivered to the College simultaneously with the delivery of the executed contract. The Letter of Credit shall be for the full amount of the bid and shall conform to the terms set forth in the terms of Letter of Credit in these specifications. **This Letter of Credit option is not available on construction projects exceeding \$100,000. Such projects require a Performance Bond. See N.J.S.A. 40A:11-22.**

## **9. INSURANCE REQUIREMENTS**

(Where applicable the following insurance requirements shall apply).

### **9.1 Workers Compensation and Employer's Liability Insurance**

This insurance shall be maintained in force during the life of the contract and shall cover all employees engaged in the performance of the contract. This insurance shall comply with all applicable statutes and regulations. Minimum Employer's Liability insurance of \$500,000.00.

### **9.2 General Liability Insurance**

This insurance shall have limits of not less than \$1,000,000.00 per occurrence and \$3,000,000.00 aggregate for bodily injury and property damage and shall be maintained in force during the life of the contract.

### **9.3 Builders Risk Insurance where applicable**

This insurance shall cover all building construction, reconstruction, alteration, or related work and shall have limits of not less than the agreed completed value of the project. The coverage shall be written on a replacement cost basis and a copy of such policy shall be provided to the College before construction commences. Coverage shall remain in force until a certificate of occupancy has been issued.

### **9.4 Automobile Liability Insurance**

This insurance shall cover the Contractor for claims arising from owned, hired and non-



owned vehicles and shall have limits of not less than \$1,000,000.00 per occurrence for bodily injury and property damage. Coverage shall be maintained in force during the life of the contract.

#### **9.5 Insurance Requirements for Subcontractors**

On any construction, reconstruction, alteration, or similar project, the Contractor shall require each Subcontractor to carry insurance coverage equal to or exceeding the type and level of coverage required to be carried by the Contractor. This coverage shall be in addition to the coverage carried by the Contractor.

#### **9.6 Certificates of the Required Insurance**

Certificates for the above listed insurance shall be submitted along with the signed contract as evidence that such insurance is in force and shall name Camden County College **as additional insured**. The notice to proceed and/or purchase order will not be issued by the College until the certificate of insurance is provided with the signed contract. Such coverage shall be with acceptable insurance companies operating on an admitted basis in the State of New Jersey.

#### **9.7 Cancellation**

Certificates for the above-listed insurance shall contain a provision that coverage afforded under the policies will not be cancelled without at least thirty (30) days prior written notice to Camden County College.

### **10. INDEMNIFICATION**

- 10.1** The contractor shall assume all risk of and responsibility for, and agrees to indemnify, defend, and save harmless Camden County College and its officials and employees from and against any and all claims, demands, suits, actions, recoveries, judgments and costs and expenses in connection therewith on account of the loss of life, property or injury or damage to the person, body or property of any person or persons whatsoever, which shall arise from or result directly or indirectly from the work and/or materials supplied under this contract. This indemnification obligation is not limited by but is in addition to the insurance obligations contained in this agreement.

### **11. AWARD**

- 11.1** Award of contract will be made by the Camden County College Board of Trustees within sixty (60) days after the bid opening or within the time allowed by law.
- 11.2** Upon award of the contract, appropriate documents shall be forwarded to the successful bidder. N.J.S.A. 40A:11-24(b) requires the contract to be signed by all parties within the time set forth in the specifications, which shall not exceed twenty-one (21) days, Sundays and holidays excepted, after the making of the award. At the expiration of such time, the College may elect to award the bid to the next lowest responsible bidder and accept as liquidated damages the bid security.

## 12. QUANTITIES

- 12.1 Quantities shown are approximate and the Board reserves the right to increase or decrease them to the extent of twenty percent (20%) at the unit price bid. If the number of units in the total is less than ten (10), the College shall have the right to increase or decrease the quantity to not more than ten (10) or less than one at same unit price. Such change, however, will only be upon the written order of the College.

## 13. PREVAILING WAGE ACT / CERTIFIED PAYROLL SUBMISSIONS

- 13.1 Pursuant to N.J.S.A. 34:11-56.25 et seq., P.L. 2009, c.249, and as amended, successful bidders on projects for public work shall adhere to all requirements of the New Jersey Prevailing Wage Act.
- 13.2 The contractor on any public works project for the College shall be required to submit a certified payroll record to the College Purchasing Department, administering said public works project. SEND TO CAMDEN COUNTY COLLEGE PURCHASING DEPARTMENT. Such certified payroll record must be submitted within ten (10) days of the payment of the wages. The contractor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The contractor shall submit said certified payrolls in the form set forth in N.J.A.C. 12:60 Appendix A. It will be the contractor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the Office of Administrative Law, CN 049, Trenton, New Jersey 08625 or the New Jersey Department of Labor, Division of Workplace Standards.

## 14. METHOD OF AWARD

- 14.1 For goods and services contracts the College may award the work based on the lowest responsible Base Bid or may elect to award the work based on the line items or unit prices, whichever is in the best interest of the College.
- 14.2 For construction contracts, the College will award the contract to the lowest responsible bidder whose base bid is the lowest.
- 14.3 If Alternates are provided for in the bid and the College determines it has sufficient funds to award some or all the Alternates, the lowest responsible Base Bid combined with such Alternates as selected will be awarded until a net amount is reached which is within the funds available. Alternate(s) may also be deferred and awarded at a later date in the sole discretion of the College. **The cost of any Alternate(s) included in the bid shall be awarded consistent with New Jersey law.**

## 15. TERM OF CONTRACT

- 15.1 The term of the contract to be awarded as the result of this bid shall be for one (1) year from the date of execution of the agreement unless otherwise stated.

## 16. TERMINATION

- 16.1 The College may terminate the agreement for any reason upon thirty (30) days written notice to the contractor. The College shall only be responsible for payment up to the effective date of termination.

**17. AMERICAN GOODS AND PRODUCTS TO BE USED WHERE AVAILABLE**

**17.1** Pursuant to N.J.S.A. 40A:11-18, only manufactured and farm products of the United States wherever available, shall be used in the execution of the work or supply of goods as specified herein.

**18. AVAILABILITY OF FUNDS**

**18.1** Pursuant to N.J.S.A. 40A:11-15 any contract resulting from this bid shall be subject to the availability and appropriation of sufficient funds annually.

**19. PURCHASING FROM STATE CONTRACT**

**19.1** The College reserves the right to purchase, during the term of any contract to be awarded, any of the specified materials and/or services through the New Jersey State Cooperative Purchasing Agreement (State Contract) if it is in the College's best interest to do so.

**20. BRAND NAMES AND/OR PRODUCT DESCRIPTION**

**20.1** Pursuant to N.J.S.A. 40A:11-13, brand names and/or descriptions used in this specification for bid proposal are to acquaint prospective bidders with the type of equipment (or commodity) described and will be used as a standard by which alternate or competitive materials offered will be judged. Competitive items must be equal to the standard described and be of the same reputation for quality and workmanship. Variations between the equipment described and material offered are to be fully explained by the bidder in an accompanying letter. In the absence of any changes by the bidder, it will be presumed and required that materials as described in these specifications be delivered.

It is recognized that no two pieces of equipment and no two products are engineered or designed the same. Trade names, brand names and models specified herein are provided to establish a minimum standard of quality acceptable to the College for this bid. Substitute brands, makes and models shall be considered and reviewed based on its ability to perform the specified tasks or provide the same quality of goods as specified in the College's bid. This is known as an "Equivalent".

If the bidder seeks to provide an Equivalent product or good, the bidder shall with its bid, submit specifications or cut sheets for such proposed Equivalent product or good. The College's Architect/Engineer, or specifications writer, for the bid shall review the submission provided by the bidder to determine whether the product or good is an Equivalent to the bid specification. The College's Architect/Engineer or specifications writer shall have the final decision on whether a bidder's submitted product specifications are an Equivalent to the named product(s) or good(s) in the bid.

**21. WORKER AND COMMUNITY RIGHT TO KNOW**

**21.1** The successful bidder shall comply with all provisions of the Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq., as well as the regulations under the Act (N.J.A.C. 8:59-1.1 et seq.).

## 22. COOPERATIVE PRICING

- 22.1 If this bid is being issued under the **Camden College Cooperative Pricing System, System Identifier No. 57-CCCPS**, then each bidder must read the **Rules and Instructions for Bids Under the Camden College Cooperative Pricing System** attached hereto and indicate on **Exhibit L** whether its bid proposal is extended or not extended to registered system members (other agencies) by checking the appropriate box.

**IMPORTANT NOTICE: A bidder's failure to complete Exhibit L in the case of a bid for the Camden College Cooperative Pricing System shall be deemed to be an extension of prices by that bidder to registered system members (other agencies).**

## 23. BIDS FOR THE PURCHASE OF TEXTILES AND ITEMS OF APPAREL

In accordance with Resolution No. 55 of the Camden College Board of Commissioners adopted on May 21, 1998, the following terms and conditions shall apply to all bids for the purchase of textiles and/or items of apparel:

### 23.1 Disclosure of all subcontractors and sites

Each bidder shall set forth in **Exhibit M** of its bid response the name and address of each subcontractor to be used in the provision of the goods or services which are the subject of this bid. Additionally, each bidder shall set forth in **Exhibit M** of its bid the name and address of all locations, including subcontractor locations, substantially involved in the production of the goods or services which are the subject of this bid. Such information shall be considered public information.

### 23.2 Certification of Compliance.

Bidders shall certify in **Exhibit M** that each location, including subcontractor locations, substantially involved in producing or distributing such goods meet the following standards:

**a. Compensation.** Wage and benefit levels must be sufficient to meet basic needs and provide some discretionary income for a family of 4 (a "living wage"). For employment within the United States, this shall mean wages of at least \$7 per hour in 1997 dollars, along with affordable family health benefits and company-paid pension benefits typical of responsible employers.

**b. Rights.** The company respects workers' rights to speak up about working conditions without fear of retaliation, and to form unions of their own choosing without employer resistance. Due process and just cause procedures are used for discipline or discharge. The company complies with all laws, regulations, and ILO standards governing the workplace. The company does not use child labor, forced labor, or corporal punishment. The company does not discriminate in hiring, promotion or compensation based on race, national origin, religion, gender, sexual preference, union affiliation, or political affiliation.

**c. Safety and Health.** The company provides a safe and healthy work environment.

### **23.3 Correction and remediation of violations; Proof of compliance**

The College may, at its discretion, require correction and remediation of violations of the standards listed above prior to renewing commerce with the contractor. The College may require further proof of compliance with the aforementioned standards. Upon the College's request, the contractor or subcontractor shall make all relevant records available to the College or its designee.

## **24. COMPLIANCE WITH PUBLIC WORKS CONTRACTOR REGISTRATION ACT**

The bidder shall comply with The Public Works Contractor Registration Act, N.J.S.A. 34:11-56.48 et seq. on all bids for public works as defined in the law. Proof of compliance with this law, when applicable, must be submitted prior to award of contract. The bidder and its named specialty trade subcontractor(s) listed in Exhibit N (see below), shall provide proof of compliance prior to award of contract or bid will be rejected as non-compliant. Questions regarding this law may be directed to the New Jersey Department of Labor and Workforce Development, Contractor Registration Unit at 609-292-9464. **The College strongly recommends that each bidder provide its public works contractor registration certificate (and certificates for each Exhibit N subcontractor) with submission of bids.**

## **25. REQUEST FOR TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION**

Upon execution of the contract with the College, the successful bidder shall be required to complete and submit IRS Form W-9, Request For Taxpayer Identification Number And Certification to the College's Purchasing Department, Roosevelt Hall, Room 135, 200 College Drive, Blackwood, New Jersey 08012. This requirement shall only apply to the successful bidder. Failure by the successful bidder to meet this requirement shall result in the College withholding such funds as required by IRS regulations.

## **26. BIDS FOR CONSTRUCTION/DISCLOSURE OF SUBCONTRACTORS**

### **26.1 Definition of Construction Bid.**

"Construction" means construction, alteration or repair of any public building when the entire cost of the work will exceed the bid threshold. In addition to construction bids, the College specifically requires that bidders identify all subcontractors in specialty trade categories for all bids where such specialty trades may be required (see below and Section 35).

### **26.2 Disclosure of Subcontractors.**

a. Bidders must list in **Exhibit N**, all subcontractors in the specialty trade categories of: Plumbing and Gas Fitting, and All Kindred Work; Steam Power Plants, Steam and Hot Water Heating and Ventilating Apparatus, and All Kindred Work; Electrical Work; and Structural Steel and Ornamental Iron Work, as required by N.J.S.A. 40A:11-16. **FAILURE TO LIST THESE REQUIRED SUBCONTRACTORS SHALL BE CAUSE FOR REJECTION OF BID.** Bidders with questions regarding this process should consult their counsel.

b. Substitution of subcontractors shall be permitted only in cases of impossibility, e.g., the death of the subcontractor or where the subcontractor goes out of business.

c. The bidder's proposal will be rejected if the subcontractors listed do not comply with the requirements for the designated work tasks.

d. A general contractor that intends to utilize a specific subcontractor to perform work in one or more of the above-referenced specialty trade categories set forth in N.J.S.A. 40A:11-16 (See **Exhibit N**), shall provide the required information about that subcontractor in the appropriate spaces for each specialty trade category applicable to the contract.

A general contractor that intends to perform work in one or more of the above-referenced specialty trade categories set forth in N.J.S.A. 40A:11-16 (See **Exhibit N**) through the use of its own employees or the general contractor himself rather than through utilization of a subcontractor shall write the word "In-House" next to each applicable category and then insert the name, and the license number where required, of each such employee of the general contractor or the general contractor himself in the appropriate spaces for each specialty trade category applicable to the contract.

If the contract does not involve any of the above-referenced specialty trade categories set forth in N.J.S.A. 40A:11-16, the contractor shall insert the word "None" in each appropriate space provided.

e. If the bidder proposes to perform **plumbing, gas fitting and all kindred work** with its own personnel, it shall follow the requirements of N.J.S.A. 45:14C-1 et seq. and N.J.A.C. 13:32-1.1 et seq.

f. If the bidder proposes to perform **electrical work** with its own personnel, it shall follow the requirements of N.J.S.A. 45:5A-1 et seq. and N.J.A.C. 13:31-1.1 et seq.

**27. RESERVED**

**28. NO DAMAGES FOR DELAY**

Extension of the contract time shall be the sole remedy of the Contractor for any: (1) delay in the commencement, prosecution or completion of the work; (2) hindrance or obstruction in the performance of the work; (3) loss of productivity; or (4) other similar claims whether or not such delays are foreseeable, unless such delay is due to the College's negligence, bad faith, active interference, tortious conduct or other reasons unanticipated by the parties that delay the contractor's performance, in accordance with the provisions of N.J.S.A. 40A:11-16.7. The aforementioned shall apply to any contract awarded as the result of this bid including but not limited to contracts for construction, goods, or services.

**29. ALTERNATIVE DISPUTE RESOLUTION**

For construction contracts, as defined in N.J.S.A. 40A:11-50, disputes arising under the contract shall be submitted to mediation or non-binding arbitration pursuant to industry standards prior to being submitted to a court for adjudication.

**30. COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT**

The successful bidder shall comply with the mandatory language of the Americans With Disabilities Act as set forth in **Exhibit P** attached hereto.

**31. COMPLIANCE WITH CONTRACTOR BUSINESS REGISTRATION PROGRAM**

Pursuant to N.J.S.A. 52:32-44, Camden County College is prohibited from entering in 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 proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the Contracting Agency prior to the time of contract, purchase order, or other contracting document is awarded or authorized.

During the course of contract performance:

- (1) The contractor shall not enter in 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 Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered in 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 [www.state.nj.us/treasury/revenue/busregcert.shtml](http://www.state.nj.us/treasury/revenue/busregcert.shtml).

Before final payment is made under the contract, the contractor shall submit to the Contracting Agency a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

**The College strongly recommends that each bidder provide its BRC (and BRC's for each subcontractor) with submission of bids.**

STATE OF NEW JERSEY BUSINESS REGISTRATION CERTIFICATE FOR STATE AGENCY AND CASINO SERVICE CONTRACTORS		DEPARTMENT OF TREASURY DIVISION OF REVENUE PO BOX 252 TRENTON, N.J. 08646-0252
TAXPAYER NAME: <b>TAX REGISTRATION TEST ACCOUNT</b>	TRADE NAME: <b>CLIENT REGISTRATION</b>	
TAXPAYER IDENTIFICATION#: <b>970-097-382/500</b>	SEQUENCE NUMBER: <b>0107330</b>	
ADDRESS: <b>847 ROEBLING AVE TRENTON NJ 08611</b>	ISSUANCE DATE: <b>07/14/04</b>	
EFFECTIVE DATE: <b>01/01/01</b>	<i>John S. Tully</i> Acting Director	
FORM-BRC(08-01)	This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.	

STATE OF NEW JERSEY BUSINESS REGISTRATION CERTIFICATE	
<b>Taxpayer Name:</b>	TAX REG TEST ACCOUNT
<b>Trade Name:</b>	
<b>Address:</b>	847 ROEBLING AVE TRENTON, NJ 08611
<b>Certificate Number:</b>	1093907
<b>Date of Issuance:</b>	October 14, 2004
<b>For Office Use Only:</b>	
	20041014112823533

**32. ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA**

The bidder shall complete, sign and return with bid **Exhibit Q** attached hereto. Form must be completed and returned with bid regardless of whether addenda were issued by the College.

**33. UNIFORMED LAW ENFORCEMENT OFFICERS REQUIREMENT FORM**

Pursuant to N.J.S.A. 40A:11-23.1(c) if uniformed law enforcement officers are required for the project, **Exhibit R** will be completed by the College and indicate a good faith estimate of the total cost of traffic control personnel, vehicles, equipment, administrative, or any other costs associated with additional traffic control requirements as determined by the College with input from any other public entity affected by the project. These estimated amounts reflect those costs above and beyond the bidder's traffic control costs.



**34. APPROVAL AND CERTIFICATION OF BILLING**

Authorization for payment of periodic billing, final payments or retainage monies requires approval and certification by formal resolution of the Camden County College Board of Trustees. Pursuant to P.L. 2006, c. 96, all billing amounts due under a contract with the successful bidder and all required purchasing documents must be received at least ten (10) days in advance of the next scheduled public meeting of the Board of Trustees for the month in which payment is requested. Approved and certified amounts due will be paid during the College's subsequent payment cycle.

**35. PROPRIETARY GOODS**

College to Check if applicable

If checked off above, the goods set forth in the technical specifications have been certified as proprietary goods in accordance with the Local Public Contracts Law, N.J.S.A. 40A:11-1 et seq. No substitutions or equivalents will be accepted. Please see the technical specifications attached hereto.

**36. CONTRACTS WHERE ASPHALT WORK IS INCLUDED IN SPECIFICATIONS**

P.L. 2015, c.201 requires the inclusion of a pay item for an asphalt price adjustment for any bid specification that includes the purchase or use of hot mix asphalt; provides for application of a fuel price adjustment where a pay item is eligible (see NJDOT Section 160.03.01, where applicable); for contracts issued for more than 1,000 tons, requires the price adjustment pay item be applied to each ton of hot mix asphalt purchased and used, not just the tonnage exceeding the 1,000 ton threshold; clarifies that the term "hot mix asphalt" includes equivalent asphalt cement-based products (e.g. warm mix asphalt); prohibits disaggregation of quantities to avoid compliance with P.L. 2015, c.201.

**37.** Pursuant to N.J.S.A. 40A:11-16.6, all construction contracts issued by the College when the total price of the originally awarded contract equals or exceed \$5,000,000.00, shall allow for value engineering construction change orders to be approved after the award of the contract.

**38. PERMISSION FOR BIDDER TO WITHDRAW A PUBLIC WORKS BID DUE TO A MISTAKE IN CERTAIN CIRCUMSTANCES**

Effective March 4, 2011, N.J.S.A. 40A:11-23.3 authorizes a bidder to request withdrawal of a public works bid due to a mistake on the part of the bidder. A mistake is defined by N.J.S.A. 40A:11-2(42) as a clerical error that is an unintentional and substantial computational error or an unintentional omission of a substantial quantity of labor, material, or both, from the final bid computation.

A bidder claiming a mistake under N.J.S.A. 40A:11-23.3 must submit a request for withdrawal, in writing, by certified or registered mail to the Camden County College Purchasing Department, 200 College Drive, Roosevelt Hall, Room 135, Blackwood, New Jersey, 08012. Written requests must be provided within five business days after the receipt and opening of the bids. The bid withdrawal shall be effective as of the postmark of the certified or registered mailing.

A bidder's request to withdraw the bid shall contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written

information **shall** be reviewed and evaluated by the public owner's designated staff pursuant to the statutory criteria of N.J.S.A. 40A:11-23.3.

The College will not consider any written request for a bid withdrawal for a mistake as defined by N.J.S.A. 40A:11-2(42), by a bidder in the preparation of a bid proposal unless the postmark of the certified or registered mailing is within five business days following the opening of bids.

If a bidder is granted a bid withdrawal, the bidder shall be disqualified from future bidding on the same project, including whenever all bids are rejected pursuant to N.J.S.A. 40A:11-13.2

**39. N.J.A.C. § 17:44-2.2 AUTHORITY TO AUDIT OR REVIEW CONTRACT RECORDS**

(a) Relevant records of private vendors or other persons entering into contracts with covered entities are subject to audit or review by OSC pursuant to N.J.S.A. 52:15C-14(d).

(b) The contract partner 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."

**40. NEW JERSEY ANTI-DISCRIMINATION PROVISIONS: N.J.S.A. 10:2-1 et seq.**

If awarded a contract, the contractor agrees to abide by the New Jersey anti-discrimination provisions contained in N.J.S.A. 10:2-1 et seq. See Exhibit T.

**41. CHANGED CONDITIONS**

Please see Exhibit U: N.J.S.A. 40A:11-16.7, Changed conditions contract provisions; inclusion in certain construction contracts.

**END OF INSTRUCTIONS TO BIDDERS / EXHIBITS BEGIN ON NEXT PAGE**

**EXHIBIT A**  
**BID BOND**

A. We, the undersigned

\_\_\_\_\_ as Principal and  
\_\_\_\_\_ as Surety, are hereby held and firmly bound unto  
\_\_\_\_\_ in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), lawful money of the United States for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns. Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

B. THE CONDITION of the above obligation is such that whereas the Principal has submitted to the \_\_\_\_\_,  
a certain bid attached hereto and hereby made a part of hereto and hereby made a part of hereof, to enter into a contract in writing for the (insert type of work)  
\_\_\_\_\_.

C. **NOW THEREFORE:**

If said bid shall be rejected, or in the alternate, if said bid shall be accepted and the Principal shall execute and deliver a contract in the form of Agreement required by the Bid Documents and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all respects perform the agreement created by the acceptance of said bid. Then this obligation shall be void, otherwise the same shall remain in 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.

D. THE SURETY for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall in no way be impaired or affected by an extension of the time within the "OBLIGEE" may accept such bid. And said Surety does hereby waive notice of any such extension.

E. IN WITNESS, WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as corporations have caused their corporate seals to be hereto fixed and these presents to be signed by their proper officers, the day and year set forth above.

\_\_\_\_\_(L.S.)  
PRINCIPAL

\_\_\_\_\_  
SURETY

(SEAL)

\_\_\_\_\_  
BY

**NOTE: Bid Bond must be signed by an authorized agent or representative of a surety company and not by the individual or company submitting the bid.**

**EXHIBIT B**

**CONSENT OF SURETY**

BOND NO. \_\_\_\_\_  
(INSERT YOUR BOND NO. HERE)

The \_\_\_\_\_, a Corporation organized and  
(NAME OF YOUR INSURANCE COMPANY)

existing under the laws of the State of \_\_\_\_\_,

and licensed to do business in the State of New Jersey, hereby consents and agrees that if the

contract for: **FY24ITB-68** (INSERT BID NO.)

**FY24ITB-68 - Camden County College - Smoke Tower Structure AND ITEMS WHICH YOU ARE BIDDING).**

be awarded to \_\_\_\_\_.  
(NAME OF YOUR COMPANY)

the undersigned Corporation agrees with the said Camden County College, 200 College Drive, Blackwood, New Jersey 08012 to execute the final bond as required by the specifications and to become the surety in the full amount of the price bid for the faithful performance of the contract.

In Witness, Whereof, the undersigned Corporation has caused this agreement to be signed by its duly authorized representative and its Corporate Seal to be hereto affixed this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

The \_\_\_\_\_  
(NAME OF INSURANCE COMPANY)

By \_\_\_\_\_  
(ATTORNEY-IN-FACT)

Countersigned by:

**NOTE: Consent of Surety must be signed by an authorized agent or representative of a surety company and not by the individual or company submitting the bid.**

**EXHIBIT C**

**FORM OF PERFORMANCE BOND**  
(to be executed by the successful bidder)

We, the Undersigned

\_\_\_\_\_

as Principal, and \_\_\_\_\_

\_\_\_\_\_

a Corporation organized and existing under the laws of the State of \_\_\_\_\_ and authorized to do business in the State of New Jersey as surety are held and firmly bound unto \_\_\_\_\_ hereinafter called the Owner as hereinafter set forth, in the full and just several sums of

(a) \_\_\_\_\_

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

for faithful performance of the contract as hereinafter designated in Paragraph "A" and

(b) \_\_\_\_\_

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

for payment of labor and material as hereinafter designated in Paragraph "B" and

(c) \_\_\_\_\_

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

for maintenance as hereinafter designated in Paragraph "C"; lawful money of the United States of America; to be paid to the Owner, or its Assigns, to which payment well and truly to be made and done, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

Sealed with our respective seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WHEREAS, the above bonded Principal has entered into a contract with the Owner dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_ for \_\_\_\_\_

\_\_\_\_\_

upon certain terms and conditions in said contract more particularly mentioned; and

WHEREAS, it is one of the conditions of the award of the Owner pursuant to which said contract is about to be entered into, that these presents be executed.

**(Form of Performance Bond – continued)**

**NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH:**

**A.** That if the Principal shall faithfully perform the contract on its part to be performed according to the terms of said contract, or any changes or modifications therein made as therein provided; and shall indemnify and save harmless the party of the first part mentioned in the contract aforesaid, its officers, agents and servants, and each and every one of them against and from all suits and costs of every kind and description and from all damages which the said party of the first part in said contract mentioned, or any of its officers, agents or servants may be put by reason of injury to the person or property of others resulting from the performance of said work or through the negligence of the said party of the second part to said contract, or through any improper or defective machinery, implements or appliances used by the said party of the second part in the aforesaid work or through any act or omission on the part of the said party of the second part of its agents, servants or employees, and shall further indemnify and save harmless the party of the first part mentioned in the contract aforesaid its officers, agents and servants from all suits and actions of any kind or character whatsoever, which may be brought or instituted by any subcontractor, materialman or laborer who has performed work or furnished materials in or about the work required to be done pursuant to the said contract or by or on account of, any claims or amount recovered for any infringement of patent, trademark, or copyright; then this part of this obligation designated as part "A" 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.

**B.** That if the said Principal shall pay all lawful claims of subcontractors, materialmen, laborers, persons, firms or corporations for labor performed or materials, provisions, provender or other supplies or items, fuels, 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; whether or not the said material and labor enter into and become component parts of the work or improvement or in any amendment, extension or addition to said contract, then this part of this obligation designated part "B", shall be void, otherwise the same shall remain in full force and effect.

**C.** That if the said Principal shall well and truly keep and perform all the obligations, agreements, terms, and conditions of such contract, on the Principal's part to be kept and performed and said Principal shall be responsible for poor workmanship done or poor materials furnished under said contract for a period of one year from the date of the completion and final acceptance by the party of the first part and mentioned in the contract, and said Principal shall pay for all labor performed and furnished and for all materials used in correcting any poor workmanship done and replacing any poor materials furnished, then this part of this obligation designated part "C", shall be void; otherwise the same shall remain in full force and effect.

It is further agreed that any alterations which may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it or the giving by the Owner of any extension of time for the performance of the Contract or the reduction of the retained percentages as permitted by the Contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety or Sureties or either or any of them, their heirs, executors, administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any alterations, extension or forbearance being hereby waived.

**(Form of Performance Bond – continued)**

It is further agreed that in case of default in, and/or any action arising out of rights and liabilities secured by this obligation or any part hereto or any person claiming by or through it, either may use for the purpose of establishing its, or their claim, a copy of this obligation certified by the Owner, and the action, or actions, if any, arising on the within bond, shall not be a bar to any subsequent action that may arise through any liability incurred in any other action herein and based upon any other part of this obligation.

IN WITNESS, WHEREOF, the said Principal and Surety have duly executed this bond under their seals the day and year above written.

If Principal is an individual:

Witness:

\_\_\_\_\_

By \_\_\_\_\_(SEAL)

\_\_\_\_\_

Surety

\_\_\_\_\_

By \_\_\_\_\_

Attorney-in-fact  
(Corporate Seal)

If Principal is a partnership:

Witness:

\_\_\_\_\_

\_\_\_\_\_

Principal

\_\_\_\_\_ (SEAL)

Partner

\_\_\_\_\_

\_\_\_\_\_ (SEAL)

Partner

\_\_\_\_\_

Surety

By \_\_\_\_\_

Attorney-in-fact  
(Corporate Seal)

(Form of Performance Bond – continued) (N/A)

If Principal is a corporation:

Attest:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Secretary

By \_\_\_\_\_  
President

Corporate Seal:

Attest:

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

\_\_\_\_\_  
By \_\_\_\_\_  
Attorney-in-fact  
(Corporate Seal)

Approved as to Form \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
Assistant College Counsel



**EXHIBIT D**

**SAMPLE FORM OF TERMS OF LETTER OF CREDIT**

1. **AMOUNT:** The amount of this letter of credit shall be for the sum of \_\_\_\_\_.  
(Amount of Contract)

2. **TERM:** The term of this letter of credit shall be in effect and irrevocable for a period commencing on the date of execution of the agreement between Camden County College and \_\_\_\_\_  
(Name of Contractor)

and terminating one (1) year after the date of completion and final acceptance by the College of the work performed pursuant to Camden County College Bid No.:

\_\_\_\_\_  
(Bid No. and description of services/material to be provided)

3. **CAUSES FOR PROCEEDING AGAINST LETTER OF CREDIT:** The College shall have the absolute right to proceed against this letter of credit if:

(a) Contractor shall fail to faithfully perform according to the terms of the contract and Camden County College Bid No. **FY24ITB-68**, or any changes or modifications therein made as therein provided; or Contractor shall fail to indemnify and save harmless Camden County College, its officers, agents and servants, and each and every one of them against and from all suits and costs of every kind and description and from all damages which the College, or any of its officers, agents or servants may be put by reason of injury to the person or property of others resulting from the performance of said work or through the negligence of Contractor, or through any improper or defective machinery, implements or appliances used by contractor in the aforesaid work or through any act or omission on the part of Contractor, its agents, servants or employees; or contractor shall fail to further indemnify and save harmless the College, its officers, agents and servants from all suits and actions of any kind or character whatsoever, which may be brought or instituted by any subcontractors, materialman or laborer who has performed work or furnished materials in or about the work required to be done pursuant to said contract, or by or on account of, any claims or amount recovered for any

infringement of patent, trademark, or copyright; or \_\_\_\_\_

(Name of Bank)

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 Camden County College, whether or not the said material and labor enter into and become component parts of the work or improvement or in any amendment, extension or addition to said contract; or

(b) Contractor shall fail to pay all lawful sums of subcontractors, materialman, laborers, persons, firms or corporations for labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implements or machinery furnished, used or consumed in the carrying forward, performing or completing of said contract; or

(c) Contractor shall fail to well and truly keep and perform all the obligations, agreements, terms and conditions of such contract, on its part to be kept and performed and Contractor shall be responsible for poor workmanship done or poor materials furnished under said contract for a period of one (1) year from the date of the completion and final acceptance by Camden County College, and Contractor shall pay for all labor performed and furnished and for all materials used in correcting any poor workmanship done and replacing any poor materials furnished.

It is further agreed that any alterations which may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it or the giving by Camden County College of any extension of time for the performance of the contract shall not in any way release Contractor, its heirs, executors, administrators, successors or assigns, from its liability hereunder.

**NOTE: Letter of Credit must be signed by an authorized agent or representative of a bank or similar financial institution and not by the individual or company submitting the bid.**

**EXHIBIT E**  
**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 Competitive Contracting RFP submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.**

**Name of Organization:** \_\_\_\_\_

**Organization Address:** \_\_\_\_\_

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

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

**Part II**

- The list below contains the names and addresses of all individual 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. **(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. **(SKIP TO PART IV)**

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

Name of Individual or Business Entity	Address

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

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

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

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

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

**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 **Camden County College** 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 **Camden County College** to notify **Camden County College** 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 **Camden County College** permitting **Camden County College** to declare any contract(s) resulting from this certification void and unenforceable.

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

**EXHIBIT F**

**NON-COLLUSION AFFIDAVIT**

STATE OF )  
COUNTY OF )

I, \_\_\_\_\_ of the City of \_\_\_\_\_ in the County of \_\_\_\_\_ and the State of \_\_\_\_\_ of full age, being dully sworn according to law on my oath depose and say that: I am \_\_\_\_\_ of the firm of \_\_\_\_\_ the bidder making this Proposal for the above named project, and that I executed the said Proposal with full authority to do so; that said bidder had not, 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 above named project; and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge that the State of New Jersey relies upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by \_\_\_\_\_ (N.J.S.A. 52:34-15)

(Name of Contractor)

Subscribed and sworn to  
before me this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(Also type or print name of bidder  
under signature)

**EXHIBIT G**

**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**

**GOODS, PROFESSIONAL SERVICE AND GENERAL SERVICE CONTRACTS**

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

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

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

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union of the contractor's commitments under this chapter 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.

The contractor or subcontractor agrees to make good faith efforts to meet targeted College employment goals established in accordance with N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it does not discriminate on the basis of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

1. Letter of Federal Affirmative Action Plan Approval
2. Certificate of Employee Information Report
3. Employee Information Report Form AA302 (electronically provided by the Division and distributed to the public agency through the Division's website at [www.state.nj.us/treasury/contract\\_compliance](http://www.state.nj.us/treasury/contract_compliance))

The contractor and its subcontractors shall furnish such reports or other documents to the Division of Purchase & Property, CCAU, EEO Monitoring Program as may be requested by the office 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 Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

## **EXHIBIT H**

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

#### **CONSTRUCTION CONTRACTS**

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

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

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

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

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

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor



or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

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

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

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

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

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

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contractor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.

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

After notification of award, but prior to signing a construction contract, the contractor shall submit to

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

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

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

**EXHIBIT I**

**QUESTIONNAIRE ON SUPPLY/SERVICE CONTRACTS**

Please complete this questionnaire and submit it with your bid. Any necessary forms will be sent to you by the College upon award.

1. Our Company has a Federal Affirmative Action Plan Approval.

YES \_\_\_\_\_ NO \_\_\_\_\_

A. If yes, submit a photostatic copy of said approval.

B. If no, submit a photostatic copy of the New Jersey Certificate of Employee Information Report.

NONE OF THE ABOVE \_\_\_\_\_

2. We have neither State nor Federal Affirmative Action evidence. Please send us Form AA-302 (Affirmative Action Employee Information Report application). (Check if applicable \_\_\_\_\_).

I certify that the above information is correct to the best of my knowledge.

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

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

**AN EQUAL OPPORTUNITY EMPLOYER**

**EXHIBIT J**

**AFFIRMATIVE ACTION PLAN MBE/WBE TRACKING FORM**

**Definitions:**

A **Minority Business Enterprise (MBE)** is defined in the Camden County College Affirmative Action Plan as "a business which is independently owned and operated and is at least 51% owned and controlled by minority group members". Minority group members are defined in the Camden County College Affirmative Action Plan as "persons who are Black, Hispanic, Portuguese, Asian-American, American Indian or Alaskan Natives"

A **Women Business (WBE)** is defined in the Camden County College Affirmative Action Plan as "a business which is independently owned and operated and is at least 51% owned and controlled by women".

Using the definitions above, please check the following space which best describes your firm:

- \_\_\_\_\_ **Minority Business Enterprise (MBE)**
- \_\_\_\_\_ **Women Business Enterprise (WBE)**
- \_\_\_\_\_ **Neither**

**EXHIBIT K  
CERTIFICATION OF NON-DEBARMENT  
FOR FEDERAL GOVERNMENT CONTRACTS**

N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

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

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

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

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

PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning Greater than 50 Percent of Organization	
<b>Section A (Check the Box that applies)</b>	
<input type="checkbox"/>	<p>Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.</p>
<p align="center"><b>Name of Individual or Organization</b></p>	

<b>Physical Address</b>			
<b>OR</b>			
<input type="checkbox"/>	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.		
<b>Section B (Skip if no Business entity is listed in Section A above)</b>			
<input type="checkbox"/>	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization's parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization's parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization's parent entity, as the case may be.		
<b>Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity</b>			
<b>Physical Address</b>			
<b>OR</b>			
<input type="checkbox"/>	No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.		
<b>Section C – Part III Certification</b>			
I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the <b>Organization listed above in Part I</b> or, if applicable, owns greater than 50 percent of a parent entity of Camden County College. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that Camden County College is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by the College to notify the College in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the College, permitting the College to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

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

**Section A**

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

Name of Business Entity	Physical Address

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

**OR**

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

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

**\*\*Add additional Sheets if necessary\*\***

**OR**

<input type="checkbox"/>	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.
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**Section C – Part IV Certification**

I hereby certify that the **Organization listed above in Part I** does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that Camden County College is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by the College to notify the College in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the College, permitting the College to declare any contract(s) resulting from this certification void and unenforceable.

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



**EXHIBIT L**

**EXTENSION OF PRICES TO REGISTERED SYSTEM MEMBERS (OTHER AGENCIES)**

The undersigned is further:  
**(ONE BOX ONLY MUST BE CHECKED)**

WILLING to provide the item(s) herein bid upon to registered system members of the **Camden College Cooperative Pricing System, System Identifier No. 57-CCCPS**, without substitution or deviation from specifications, size, features, quality, price or availability as herein set forth. It is understood that orders will be placed directly by the registered members identified herein by separate contract, subject to the overall terms of the Master Contract to be awarded by Camden County College, and that no additional service or delivery charges will be allowed except as permitted by these specifications.

NOT WILLING to extend prices to registered system members of the **Camden College Cooperative Pricing System, System Identifier No. 57-CCCPS**, who have submitted estimates as described above. It is understood that this will not adversely affect consideration of this bid with respect to the needs of Camden College as the Lead Agency.

**EXHIBIT M**

**DISCLOSURE OF SUBCONTRACTORS AND SITES  
AND CERTIFICATION OF COMPLIANCE**

**(FOR BIDS FOR TEXTILES AND/OR ITEMS OF APPAREL ONLY)**

1. **DISCLOSURE OF SUBCONTRACTORS AND SITES – SEE PARAGRAPH 23.1**

a. List the name and address of each subcontractor to be used in the provision of the goods or services which are the subject of this bid. If extra space is required, please attach additional pages as needed.

N/A

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b. List the name and address of all locations, including subcontractor locations, substantially involved in the production of the goods or services which are the subject of this bid. If extra space is required, please attach additional pages as needed.

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2. **CERTIFICATION OF COMPLIANCE – SEE PARAGRAPH 23.2**

I hereby certify that each of the above-referenced locations, including subcontractor locations, substantially involved in producing or distributing the goods or services which are the subject of this bid, meet the standards set forth in Paragraph 23.2 of these specifications.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Type Name & Title)

\_\_\_\_\_  
(Date)

**EXHIBIT N**

**BIDS FOR CONSTRUCTION  
DISCLOSURE OF SUBCONTRACTORS**

Please list the subcontractors for the specialty trade categories listed below. If you intend to perform the work through your own employees or by yourself rather than through utilization of a subcontractor, write the word "In-House" next to each applicable category and insert the name, and license number where required, of each person in the appropriate spaces. If the contract does not involve a specialty trade listed below, write the word "None" in the appropriate space. For further instructions, see Paragraph 26 herein. **DO NOT LEAVE ANY SECTION BLANK.**

**1. Plumbing and Gas Fitting and All Kindred Work:**

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

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

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

**2. Steam Power Plants, Steam and Hot Water Heating and Ventilating Apparatus, and All Kindred Work:**

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

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

License Number: Not Applicable

**3. Electrical Work:**

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

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

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

**4. Structural Steel and Ornamental Iron Work:**

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

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

License Number: Not Applicable

**EXHIBIT O**

**RESERVED**

## **EXHIBIT P**

### **AMERICANS WITH DISABILITIES ACT Mandatory Language**

#### **Equal Opportunity for Individuals with Disabilities.**

The Contractor and the College do hereby agree that the provisions of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. s12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereunto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the College pursuant to this contract, the Contractor agrees that the performance shall be in strict compliance with the Act. In the event that the Contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the Contractor shall defend the College in any action or administrative proceeding commenced pursuant to this Act. The Contractor shall indemnify, protect, and save harmless the College, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The Contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the College's grievance procedure, the Contractor agrees to abide by any decision of the College, which is rendered pursuant to, said grievance procedure. If any action or administrative proceeding results in an award of damages against the College or if the College incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the Contractor shall satisfy and discharge the same at its own expense.

The College shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the College or any of its agents, servants, and employees, the College shall expeditiously forward or have forwarded to the Contractor every demand, complaint, notice, summons, pleading, or other process received by the College or its representatives.

It is expressly agreed and understood that any approval by the College of the services provided by the Contractor pursuant to this contract will not relieve the Contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Owner pursuant to this paragraph.

It is further agreed and understood that the Owner assumes no obligation to indemnify or save harmless the Contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this agreement. Furthermore, the Contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the Contractor's obligations assumed in this agreement, nor shall they be construed to relieve the Contractor from any liability, nor preclude the Owner from taking any other actions available to it under any other provisions of this agreement or otherwise at law.

**EXHIBIT Q**

**CAMDEN COUNTY COLLEGE  
ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA**

**BIDDER REQUIRED TO COMPLETE AND RETURN FORM WITH BID REGARDLESS OF  
WHETHER ADDENDA WAS ISSUED.  
FAILURE TO COMPLETE AND RETURN FORM IS A FATAL DEFECT WHICH CANNOT BE  
CURED AND BID WILL BE REJECTED.**

**A.** Bidder hereby acknowledges receipt of the following Addenda:

<u>Addendum Number</u>	<u>Dated</u>	<u>Initial</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**OR:**

**B.** Bidder acknowledges to the best of his/her knowledge no addendum has been issued by the College: \_\_\_\_\_ Dated \_\_\_\_\_ Initial \_\_\_\_\_

**Bidder is required to complete, sign and submit form with bid regardless of whether addenda were issued. Failure to complete and return form is a fatal defect which cannot be cured and bid will be rejected. See: N.J.S.A. 40A:11-23.2**

By: \_\_\_\_\_  
(Print or Type Name of Authorized Individual)

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

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

**EXHIBIT R**

**CAMDEN COUNTY COLLEGE  
UNIFORMED LAW ENFORCEMENT OFFICERS REQUIREMENT**

Pursuant to N.J.S.A. 40A:11-23.1(c), the College has determined the following:

- ( **X** )      Uniformed law enforcement officers **are not required** for the project.
- (    )      Uniformed law enforcement officers **are required** for the project.

Reasonable estimate of costs for the following:

traffic control personnel	\$ _____
vehicles	\$ _____
equipment	\$ _____
administrative	\$ _____
other (specify)	
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
Total costs	\$ _____

The above costs associated with additional traffic control required by the College have been reasonably estimated in cooperation and consultation with the following municipalities affected by the project.

Name of Municipality	Contact person
_____	_____
_____	_____
_____	_____
_____	_____

## EXHIBIT S

### Disclosure of Investment Activities in Iran

Person or Entity:	
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#### Part 1: Certification

BIDDERS ARE TO COMPLETE PART 1 BY CHECKING **EITHER BOX**.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the N.J. Division of Purchase and Property website at [www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf](http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf). Bidders must review this list prior to completing the below certification. Failure to complete the certification may render a bidder's proposal non-responsive. If a person or entity is found to be in potential violation of law, the matter shall be referred to the State Attorney General who shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

#### CHECK THE APPROPRIATE BOX:

I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. I will skip Part 2 and sign and complete the Certification below.

**OR**

I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below sign and complete the Certification below. Failure to provide such will result in the proposal being rendered as nonresponsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

#### Part 2 – Additional Information

PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN. You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran on additional sheets provided by you.

#### Part 3: Certification

I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments there to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the Contracting Unit is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the Contracting Unit to notify the Contracting Unit in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the Contracting Unit and that the Contracting Unit at its option may declare any contract(s)



resulting from this certification void and unenforceable.

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



## **EXHIBIT U**

### **NEW JERSEY ANTI-DISCRIMINATION PROVISIONS N.J.S.A. 10:2-1 et seq.**

Pursuant to N.J.S.A. 10:2-1, if awarded a contract, the contractor agrees that:

a. In the hiring of persons for the performance of work under this 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 this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;

b. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this 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, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

c. There may be deducted from the amount payable to the contractor by the contracting public agency, under this 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. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

No provision in this section shall be construed to prevent a board of education from designating that a contract, subcontract or other means of procurement of goods, services, equipment or construction shall be awarded to a small business enterprise, minority business enterprise or a women's business enterprise pursuant to P.L.1985, c.490 (C.18A:18A-51 et seq.).

## Exhibit V

### **40A:11-16.7. Changed conditions contract provisions; inclusion in certain construction contracts**

#### **a. A contract subject to this section shall include the following differing site conditions provisions:**

(1) If the contractor encounters differing site conditions during the progress of the work of the contract, the contractor shall promptly notify the contracting unit in writing of the specific differing site conditions encountered before the site is further disturbed and before any additional work is performed in the impacted area.

(2) Upon receipt of a differing site conditions notice in accordance with paragraph (1) of this subsection, or upon the contracting unit otherwise learning of differing site conditions, the contracting unit shall promptly undertake an investigation to determine whether differing site conditions are present.

(3) If the contracting unit determines different site conditions that may result in additional costs or delays exist, the contracting unit shall provide prompt written notice to the contractor containing directions on how to proceed.

(4)(a) The contracting unit shall make a fair and equitable adjustment to the contract price and contract completion date for increased costs and delays resulting from the agreed upon differing site conditions encountered by the contractor.

(b) If both parties agree that the contracting unit's investigation and directions decrease the contractor's costs or time of performance, the contracting unit shall be entitled to a fair and equitable downward adjustment of the contract price or time of performance.

(c) If the contracting unit determines that there are no differing site conditions present that would result in additional costs or delays, the contracting unit shall so advise the contractor, in writing, and the contractor shall resume performance of the contract, and shall be entitled to pursue a differing site conditions claim against the contracting unit for additional compensation or time attributable to the alleged differing site conditions.

(5) Execution of the contract by the contractor shall constitute a representation that the contractor has visited the site and has become generally familiar with the local conditions under which the work is to be performed.

(6) As used in this subsection, "differing site conditions" mean physical conditions at the contract work site that are subsurface or otherwise concealed and which differ materially from those indicated in the contract documents or are of such an unusual nature that the conditions differ materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the contract.

#### **b. A contract subject to this section shall include the following suspension of work provisions:**

(1) The contracting unit shall provide written notice to the contractor in advance of any suspension

of work lasting more than 10 calendar days of the performance of all or any portion of the work of the contract.

(2) If the performance of all or any portion of the work of the contract is suspended by the contracting unit for more than 10 calendar days due to no fault of the contractor or as a consequence of an occurrence beyond the contracting unit's control, the contractor shall be entitled to compensation for any resultant delay to the project completion or additional contractor expenses, and to an extension of time, provided that, to the extent feasible, the contractor, within 10 calendar days following the conclusion of the suspension, notifies the contracting unit, in writing, of the nature and extent of the suspension of work. The notice shall include available supporting information, which information may thereafter be supplemented by the contractor as needed and as may be reasonably requested by the contracting unit. Whenever a work suspension exceeds 60 days, upon seven days' written notice, either party shall have the option to terminate the contract for cause and to be fairly and equitably compensated therefor.

(3) Upon receipt of the contractor's suspension of work notice in accordance with paragraph (2) of this subsection, the contracting unit shall promptly evaluate the contractor's notice and promptly advise the contractor of its determination on how to proceed in writing.

(4)(a) If the contracting unit determines that the contractor is entitled to additional compensation or time, the contracting unit shall make a fair and equitable upward adjustment to the contract price and contract completion date.

(b) If the contracting unit determines that the contractor is not entitled to additional compensation or time, the contractor shall proceed with the performance of the contract work, and shall be entitled to pursue a suspension of work claim against the contracting unit for additional compensation or time attributable to the suspension.

(5) Failure of the contractor to provide timely notice of a suspension of work shall result in a waiver of a claim if the contracting unit can prove by clear and convincing evidence that the lack of notice or delayed notice by the contractor actually prejudiced the contracting unit's ability to adequately investigate and defend against the claim.

**c. A contract subject to this section shall include the following change in character of work provisions:**

(1) If the contractor believes that a change directive by the contracting unit results in a material change to the contract work, the contractor shall so notify the contracting unit in writing. The contractor shall continue to perform all work on the project that is not the subject of the notice.

(2) Upon receipt of the contractor's change in character notice in accordance with paragraph (1) of this subsection, the contracting unit shall promptly evaluate the contractor's notice and promptly advise the contractor of its determination on how to proceed in writing.

(3)(a) If the contracting unit determines that a change to the contractor's work caused or directed by the contracting unit materially changes the character of any aspect of the contract work, the contracting unit shall make a fair and equitable upward adjustment to the contract price and contract completion date. The basis for any such price adjustment shall be the difference between

the cost of performance of the work as planned at the time of contracting and the actual cost of such work as a result of its change in character, or as otherwise mutually agreed upon by the contractor and the contracting unit prior to the contractor performing the subject work.

(b) If the contracting unit determines that the contractor is not entitled to additional compensation or time, the contractor shall continue the performance of all contract work and shall be entitled to pursue a claim against the contracting unit for additional compensation or time attributable to the alleged material change.

(4) As used in this subsection, “material change” means a character change which increases or decreases the contractor’s cost of performing the work, increases or decreases the amount of time by which the contractor completes the work in relation to the contractually required completion date, or both.

**d. A contract subject to this section shall include the following change in quantity provisions:**

(1) The contracting unit may increase or decrease the quantity of work to be performed by the contractor.

(2)(a) If the quantity of a pay item is cumulatively increased or decreased by 20 percent or less from the bid proposal quantity, the quantity change shall be considered a minor change in quantity.

(b) If the quantity of a pay item is increased or decreased by more than 20 percent from the bid proposal quantity, the quantity change shall be considered a major change in quantity.

(3) For any minor change in quantity, the contracting unit shall make payment for the quantity of the pay item performed at the bid price for the pay item.

(4)(a) For a major increase in quantity, the contracting unit or contractor may request to renegotiate the price for the quantity in excess of 120 percent of the bid proposal quantity. If a mutual agreement cannot be reached on a negotiated price for a major quantity increase, the contracting unit shall pay the actual costs plus an additional 10 percent for overhead and an additional 10 percent for profit, unless otherwise specified in the original bid.

(b) For a major decrease in quantity, the contracting unit or contractor may request to renegotiate the price for the quantity of work performed. If a mutual agreement cannot be reached on a negotiated price for a major quantity decrease, the contracting unit shall pay the actual costs plus an additional 10 percent for overhead and an additional 10 percent for profit, unless otherwise specified in the original bid; provided, however, that the contracting unit shall not make a payment in an amount that exceeds 80 percent of the value of the bid price multiplied by the bid proposal quantity.

(5) As used in this subsection, the term “bid proposal quantity” means the quantity indicated in the bid proposal less the quantities designated in the project plans as “if and where directed.”

## BID FORM

The Bidder has carefully examined the specifications, plans and form of contract for the project named above. The Bidder has made himself familiar with the site, and will contract to carry out and complete said project as specified and delineated at the price per unit measure or lump sum for each scheduled item of work stated in the following proposal.

It is understood that the Total Price for the entire contract stated by the undersigned in the Schedule is based on the estimated quantities and will control in the awarding of the contract. It is further understood that the quantities stated in this Schedule of Prices for the various items are estimated only and may be increased or decreased. Payment will be made only for the actual quantity of authorized work done under each scheduled item.

All Requests for Information (RFI) must be submitted by email to Mr. Dirk Muits at [dmuits@bachdesigngroup.com](mailto:dmuits@bachdesigngroup.com) by Monday, June 24, 2024 by 4:00 PM.

The Bidder agrees that the price bid shall apply to actual quantities required, approved and used during the Work, including Addenda. He further agrees to complete the entire work for this Contract within **ONE HUNDRED EIGHTY (180) CALENDAR DAYS** from the date specified in the Notice-to-Proceed. He further agrees that the work will be substantially completed for this Contract within **ONE HUNDRED SIXTY (160) CALENDAR DAYS** from the date specified in the Notice-to-Proceed.

The Bidder hereby agrees to be bound by the award of the Bid, and if awarded the Contract on this Bid, to execute the Contract and the required Bonds and Insurance Certificates, and to furnish all other information and documents required by the Contract Documents within the time limits specified.

The Bidder understands that Owner reserves the right to reject any or all Bids, or to waive any informality or technicality of any Bid, in the interest of the Owner.

If this Bid shall be accepted by Owner, and the Bidder shall fail to execute the Contract as aforesaid, then Owner shall be entitled to recover from the Bidder the Bid Bond, and any other penalty specified in the Contract Documents.

The signer of this Proposal as Bidder declares:

That he has received and examined the Contract Documents, including the Advertisement for Bidders, Instructions to Bidders, Contract Agreement, General Conditions, Supplementary Conditions, Specifications, and Addenda, if any.

That he has examined the site of the work.

In submitting this Proposal, Bidder agrees:

To accept the provisions of the Instructions for Bidders including disposition of Bid Security.

## **BID FORM (CONTINUED)**

To enter into and execute a Contract, if awarded on the basis of this Proposal, and to furnish the Surety Bonds required by the General and Supplementary Conditions.

To accomplish the work in accordance with the Contract Documents and to complete the work in the time stipulated in the Information for Bidders.

The bidder understands that a detailed and balanced schedule of values will be required under this contract. Bidder understands and agrees that not all items under the Owner approved schedule of values will be necessary under this contract and that the Owner may elect not to authorize the Contractor to perform work under an individual item(s). The bidder also understands that the Owner may increase or decrease the quantity of work to be done under any item and that the Contractor will only be paid for actual quantity of work provided based on the prices delineated under the Owner approved schedule of values.

It is recognized that no two pieces of equipment and no two products are engineered or designed exactly the same. Trade names, brand names and models specified herein are provided to establish a minimum standard of quality acceptable to the Owner for this bid. Substitute brands, makes and models shall be considered and reviewed on the basis of their ability to perform the specified tasks or provide the same quality of goods as specified in the Owner's bid. This is known as an "Equivalent".

If the bidder seeks to provide an Equivalent product or good, the bidder shall with its bid submission include specifications or cut sheets for such proposed Equivalent product or good. The Owner's Architect/Engineer for the bid shall review the submission provided by the bidder to determine whether the product or good is an Equivalent to the bid specification. The Owner's Architect/Engineer for the bid shall have the final decision on whether a bidder's submitted product specifications are an Equivalent to the named product(s) or good(s) in this bid.

Should any requirements in the contract documents be found to conflict with the Owner's general bid boilerplate (the ITB pages) the general bid boilerplate provisions and language shall prevail.

If the Contractor fails to complete the project and each and every part and appurtenance thereof fully, entirely and in conformity with the provisions of the contract within the times stated in the contract, or within such further time as may have been granted in accordance with the provisions of the contract, then the Owner may withhold permanently from the Contractor's total compensation the appropriate amount of \$500 for each and every day that the work remains incomplete, which said amount shall not be considered a penalty, but liquidated damages for the loss, inconvenience and extra expense to the Owner by such delays.

The Bidder proposes to furnish all labor, materials and equipment required to complete the work in every detail, in accordance with the plans, specifications and other contract documents prepared by Bach Associates, at and for the following Prices:



## **Base Bid**

The below (in numbers) and the following (in words) lump sum base bid includes all labor, superintendence, materials, tools, transportation, plant and equipment and all means of construction necessary and reasonably incidental to complete all the work and improvements to be performed under the Base Bid as specified in the Bid Documents and Specifications for “Camden County College Smoke Tower Structure” as prepared by Bach Associates, PC and dated May 30, 2024.

Materials and labor obviously a part of the work and necessary for the proper installation and/or operation of same, although not specifically indicated on the Contract Drawings, the specifications, and /or listed on this Proposal bid form and will be provided as if called out in detail at no additional cost to the Owner.

## **Construction Allowance**

A \$ 10,000.00 lump sum allowance is to be included in the total price bid for Base Bid and is intended to be used if and where directed for work associated with the project, throughout the course of construction.

**SUBMITTED BID PACKAGE MUST INCLUDE IDENTIFICATION OF SUBCONTRACTORS AS LISTED IN CORRESPONDING EXHIBIT IN INSTRUCTIONS TO BIDDERS DOCUMENT.**

**Total Contract Amount BASE BID including \$10,000.00 CONSTRUCTION ALLOWANCE:**

**TOTAL BID PRICE INCLUDING ALLOWANCE (In Numbers)** \_\_\_\_\_

(In words) \_\_\_\_\_

\_\_\_\_\_  
Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern).

**BID FORM (CONTINUED)**

BIDDER'S SIGNATURE:

A. If a Corporation:

Name of Bidder: \_\_\_\_\_

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

Name of Person Signing: \_\_\_\_\_

Title of Person Signing: \_\_\_\_\_

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

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

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

Incorporated under the laws of the State of: \_\_\_\_\_

B. If a Partnership, Individual, or Non-Incorporated Organization:

Name of Business Entity: \_\_\_\_\_

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

Name of Person Signing: \_\_\_\_\_

Title of Person Signing: \_\_\_\_\_

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

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

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

END OF DOCUMENT

**ARPA TERMS & CONDITIONS – REQUIRED CONTRACT PROVISIONS FOR EC 6.1 PROJECTS**

THRESHOLD	PROVISION	CITATION
<b>Additional 2 CFR 200 references &amp; Other Regulations</b>		
None	The Federal awarding agency must establish conflict of interest policies for Federal awards. The non-Federal entity must disclose in writing any potential conflict of interest to the Federal awarding agency or pass-through entity in accordance with applicable Federal awarding agency policy.	2 CFR 200.112
None	The non-Federal entity or applicant for a Federal award must disclose, in a timely manner, in writing to the Federal awarding agency or pass-through entity all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Non-Federal entities that have received a Federal award including the term and condition outlined in appendix XII to this part are required to report certain civil, criminal, or administrative proceedings to SAM (currently FAPIIS). Failure to make required disclosures can result in any of the remedies described in § 200.339. (See also 2 CFR part 180, 31 U.S.C. 3321, and 41 U.S.C. 2313.)	2 CFR 200.113
None	Non-Federal entities are subject to the non-procurement debarment and suspension regulations implementing Executive Orders 12549 and 12689, 2 CFR part 180. The regulations in 2 CFR part 180 restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs or activities.	2 CFR 200.114
Over \$50,000	Federal awarding agencies and recipients are subject to the regulations implementing Never Contract with the Enemy in 2 CFR part 183. The regulations in 2 CFR part 183 affect covered contracts, grants and cooperative agreements that are expected to exceed \$50,000 within the period of performance, are performed outside the United States and its territories, and are in support of a contingency operation in which members of the Armed Forces are actively engaged in hostilities.	2 CFR 200.115
None	<p>(a) Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:</p> <ol style="list-style-type: none"> <li>(1) Procure or obtain;</li> <li>(2) Extend or renew a contract to procure or obtain; or</li> <li>(3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).               <ol style="list-style-type: none"> <li>(i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).</li> <li>(ii) Telecommunications or video surveillance services provided by such entities or using such equipment.</li> <li>(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.</li> </ol> </li> </ol> <p>(b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.</p> <p>(c) See Public Law 115-232, section 889 for additional information.</p> <p>(d) See also § 200.471.</p>	2 CFR 200.116
>\$10,000	<p>An NFE (non-Federal Entity) that is a state agency or an agency of a political subdivision of a state, and the NFE's contractors must comply with Section 6002 of the Solid Waste Disposal Act.</p> <p>Applicable NFEs must include a contract provision requiring compliance with this requirement.</p> <p>This includes contracts awarded by a state agency or political subdivision of a state and its contractors for certain items, as designated by the EPA, with a purchase price greater than \$10,000.</p> <p>Indian Tribal Governments and nonprofit organizations are not required to comply with this provision. Additional requirements are listed below.</p>	2 CFR 200.323
None	<p>Financial records, supporting documents, statistical records, and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. <b>All records related to ARPA shall be maintained for 5 years per the ARPA terms, conditions, and regulations.</b> The only exceptions are the following:</p> <p>(a) If any litigation, claim, or audit is started before the expiration of the 3-year period, the records must be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken. <b>All records related to ARPA shall be maintained for 5 years per the ARPA terms, conditions and regulations.</b></p>	<p>2 CFR 200.334</p> <p align="center">&amp;</p> <p>New Jersey's general public records law (N.J.S.A. 47), the State's records management statute (N.J.S.A. 47:3-15 et seq.), and administrative rules under N.J.A.C. Title 15:3 et seq.</p>

	<p>(b) When the non-Federal entity is notified in writing by the Federal awarding agency, cognizant agency for audit, oversight agency for audit, cognizant agency for indirect costs, or pass-through entity to extend the retention period.</p> <p>(c) Records for real property and equipment acquired with Federal funds must be retained for three years after final disposition. All records related to ARPA shall be maintained for 5 years per the ARPA terms and conditions and regulations.</p> <p>(d) When records are transferred to or maintained by the Federal awarding agency or pass-through entity, the 3-year retention requirement is not applicable to the non-Federal entity All records related to ARPA shall be maintained for 5 years per the ARPA terms and conditions and regulations. <b>All records related to ARPA shall be maintained for 5 years per the ARPA terms, conditions, and regulations.</b></p> <p>(e) Records for program income transactions after the period of performance. In some cases, recipients must report program income after the period of performance. Where there is such a requirement, the retention period for the records pertaining to the earning of the program income starts from the end of the non-Federal entity's fiscal year in which the program income is earned.</p> <p>(f) Indirect cost rate proposals and cost allocations plans. This paragraph applies to the following types of documents and their supporting records: Indirect cost rate computations or proposals, cost allocation plans, and any similar accounting computations of the rate at which a particular group of costs is chargeable (such as computer usage chargeback rates or composite fringe benefit rates).</p> <p>(1) <i>If submitted for negotiation.</i> If the proposal, plan, or other computation is required to be submitted to the Federal Government (or to the pass-through entity) to form the basis for negotiation of the rate, then the 3-year retention period for its supporting records starts from the date of such submission. <b>All records related to ARPA shall be maintained for 5 years per the ARPA terms, conditions, and regulations.</b> (2) <i>If not submitted for negotiation.</i> If the proposal, plan, or other computation is not required to be submitted to the Federal Government (or to the pass-through entity) for negotiation purposes, then the 3-year retention period for the proposal, plan, or computation and its supporting records starts from the end of the fiscal year (or other accounting period) covered by the proposal, plan, or other computation. <b>All records related to ARPA shall be maintained for 5 years per the ARPA terms, conditions, and regulations.</b></p>	
None	<p>The Federal awarding agency and the non-Federal entity should, whenever practicable, collect, transmit, and store Federal award-related information in open and machine-readable formats rather than in closed formats or on paper in accordance with applicable legislative requirements. A machine-readable format is a format in a standard computer language (not English text) that can be read automatically by a web browser or computer system. The Federal awarding agency or pass-through entity must always provide or accept paper versions of Federal award-related information to and from the non-Federal entity upon request. If paper copies are submitted, the Federal awarding agency or pass-through entity must not require more than an original and two copies. When original records are electronic and cannot be altered, there is no need to create and retain paper copies. When original records are paper, electronic versions may be substituted through the use of duplication or other forms of electronic media provided that they are subject to periodic quality control reviews, provide reasonable safeguards against alteration, and remain readable.</p>	2 CFR 200.336
	<b>ARPA Terms &amp; Conditions</b>	
ARPA Terms, Conditions, & Records	<p>8. Conflicts of Interest. Recipient understands and agrees it must maintain a conflict of interest policy consistent with 2 C.F.R. § 200.318(c) and that such conflict of interest policy is applicable to each activity funded under this award. Recipient and subrecipients must disclose in writing to Treasury or the pass-through entity, as appropriate, any potential conflict of interest affecting the awarded funds in accordance with 2 C.F.R. § 200.112.</p>	<p>Section 9901 of the American Rescue Plan Act, Pub. L. No. 117-2; Section 602(b), 603(b) and/or 603 (c) as applicable</p>
ARPA Terms, Conditions, & Records	<p>9. Compliance with Applicable Law and Regulations.</p> <p>a. Recipient agrees to comply with the requirements of section 603 of the Act, regulations adopted by Treasury pursuant to section 603(f) of the Act, and guidance issued by Treasury regarding the foregoing. Recipient also agrees to comply with all other applicable federal statutes, regulations, and executive orders, and Recipient shall provide for such compliance by other parties in any agreements it enters into with other parties relating to this award.</p> <p>b. Federal regulations applicable to this award include, without limitation, the following:</p> <p>i. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, other than such provisions as Treasury may determine are inapplicable to this Award and subject to such exceptions as may be otherwise provided by Treasury. Subpart F – Audit Requirements of the Uniform Guidance, implementing the Single Audit Act, shall apply to this award.</p> <p>ii. Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25 is hereby incorporated by reference.</p> <p>iii. Reporting Subaward and Executive Compensation Information, 2 C.F.R. Part 170, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 170 is hereby incorporated by reference.</p> <p>iv. OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19.</p> <p>v. Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part 200 is hereby incorporated by reference.</p>	“

	<p>vi. Governmentwide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20. (Subrecipient Only)</p> <p>vii. New Restrictions on Lobbying, 31 C.F.R. Part 21.</p> <p>viii. Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (42 U.S.C. §§ 4601-4655) and implementing regulations.</p> <p>ix. Generally applicable federal environmental laws and regulations.</p> <p>c. Statutes and regulations prohibiting discrimination applicable to this award include, without limitation, the following:</p> <p>i. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.) and Treasury’s implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;</p> <p>ii. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;</p> <p>iii. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;</p> <p>iv. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), and Treasury’s implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and</p> <p>v. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.</p>	
ARPA Terms, Conditions, & Records	12. False Statements. Recipient understands that making false statements or claims in connection with this award is a violation of federal law and may result in criminal, civil, or administrative sanctions, including fines, imprisonment, civil damages and penalties, debarment from participating in federal awards or contracts, and/or any other remedy available by law.	“
ARPA Terms, Conditions, & Records	13. Publications. Any publications produced with funds from this award must display the following language: “This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of Recipient] by the U.S. Department of the Treasury.”	“
ARPA Terms, Conditions, & Records	<p>16. Protections for Whistleblowers.</p> <p>a. In accordance with 41 U.S.C. § 4712, Recipient may not discharge, demote, or otherwise discriminate against an employee in reprisal for disclosing to any of the list of persons or entities provided below, information that the employee reasonably believes is evidence of gross mismanagement of a federal contract or grant, a gross waste of federal funds, an abuse of authority relating to a federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a federal contract (including the competition for or negotiation of a contract) or grant.</p> <p>b. The list of persons and entities referenced in the paragraph above includes the following:</p> <p>i. A member of Congress or a representative of a committee of Congress;</p> <p>ii. An Inspector General;</p> <p>iii. The Government Accountability Office;</p> <p>iv. A Treasury employee responsible for contract or grant oversight or management;</p> <p>v. An authorized official of the Department of Justice or other law enforcement agency;</p> <p>vi. A court or grand jury; or</p> <p>vii. A management official or other employee of Recipient, contractor, or subcontractor who has the responsibility to investigate, discover, or address misconduct.</p> <p>c. Recipient shall inform its employees in writing of the rights and remedies provided under this section, in the predominant native language of the workforce.</p>	“
ARPA Terms, Conditions, & Records	17. Increasing Seat Belt Use in the United States. Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Recipient should encourage its contractors to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented or personally owned vehicles.	“
ARPA Terms, Conditions, & Records	18. Reducing Text Messaging While Driving. Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Recipient should encourage its employees, subrecipients, and contractors to adopt and enforce policies that ban text messaging while driving, and Recipient should establish workplace safety policies to decrease accidents caused by distracted drivers	“

## ELIGIBILITY VERIFICATION FORM

<b>ENTITY LEGAL NAME:</b>		<b>Date:</b>
<b>STREET ADDRESS:</b>		
<b>CITY:</b>	<b>STATE:</b>	<b>ZIP:</b>
<b>CONTACT NAME:</b>		
<b>CONTACT EMAIL:</b>		
<b>CONTACT PHONE:</b>		

*All entities must be pre-vetted for eligibility/ability to perform the outlined ARPA funded scope of work and a record (PDF of SAM.gov screenshot) of SAM debarment clearance should be attached to this form. This should be completed before submitting.*

**Return PDF of Form Here:** [enter email address]

### Section 1:

Provide your organization's Unique Entity Identifier (UEI) number (as generated by registration in SAM.gov):

Scope of Work Description:

### Section 2: (optional)

Principal(s):	Title(s):	Gender M/F	Race:**

\*\* W = White B = Black H = Hispanic A/PI = Asian/Pacific Islander AL/AN Alaskan/American Native

### Certification

*Your signature certifies that the information provided on this form is correct and that failure to provide the requested information may disqualify you from receiving or retaining funds.*

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Printed Name & Title**

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

### For Department Use Only:

SAM Debarment/Certification record of Clearance	Yes [ ] No [ ]	Note:
State Debarred Vendor List Cleared	Yes [ ] No [ ]	Note:
Verified By:		Date:

## DRUG-FREE WORKPLACE

The ARPA Terms & Conditions (Item #9(b)(vi)) required compliance with Governmentwide Requirements for Drug-Free Workplace per 31 C.F.R. Part 20. Following is direct guidance provided in Subpart B:

### [§ 20.200 What must I do to comply with this part?](#)

There are two general requirements if you are a recipient other than an individual.

(a) First, you must make a good faith effort, on a continuing basis, to maintain a drug-free workplace. You must agree to do so as a condition for receiving any award covered by this part. The specific measures that you must take in this regard are described in more detail in subsequent sections of this subpart. Briefly, those measures are to -

(1) Publish a drug-free workplace statement and establish a drug-free awareness program for your employees (see §§ [20.205](#) through [20.220](#)); and

(2) Take actions concerning employees who are convicted of violating drug statutes in the workplace (see [§ 20.225](#)).

(b) Second, you must identify all known workplaces under your Federal awards (see [§ 20.230](#)).

### [§ 20.205 What must I include in my drug-free workplace statement?](#)

You must publish a statement that -

(a) Tells your employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in your workplace;

(b) Specifies the actions that you will take against employees for violating that prohibition; and

(c) Lets each employee know that, as a condition of employment under any award, he or she:

(1) Will abide by the terms of the statement; and

(2) Must notify you in writing if he or she is convicted for a violation of a criminal drug statute occurring in the workplace and must do so no more than five calendar days after the conviction.

### [§ 20.210 To whom must I distribute my drug-free workplace statement?](#)

You must require that a copy of the statement described in [§ 20.205](#) be given to each employee who will be engaged in the performance of any Federal award.

### [§ 20.215 What must I include in my drug-free awareness program?](#)

You must establish an ongoing drug-free awareness program to inform employees about -

(a) The dangers of drug abuse in the workplace;

(b) Your policy of maintaining a drug-free workplace;

(c) Any available drug counseling, rehabilitation, and employee assistance programs; and

(d) The penalties that you may impose upon them for drug abuse violations occurring in the workplace.

### [§ 20.220 By when must I publish my drug-free workplace statement and establish my drug-free awareness program?](#)

If you are a new recipient that does not already have a policy statement as described in [§ 20.205](#) and an ongoing awareness program as described in [§ 20.215](#), you must publish the statement and establish the program by the time given in the following table:

If . . .	then you . . .
(a) The performance period of the award is less than 30 days	must have the policy statement and program in place as soon as possible, but before the date on which performance is expected to be completed.
(b) The performance period of the award is 30 days or more	must have the policy statement and program in place within 30 days after award.



If . . .	then you . . .
(c) You believe there are extraordinary circumstances that will require more than 30 days for you to publish the policy statement and establish the awareness program	may ask the Department of the Treasury awarding official to give you more time to do so. The amount of additional time, if any, to be given is at the discretion of the awarding official.

[§ 20.225 What actions must I take concerning employees who are convicted of drug violations in the workplace?](#)

There are two actions you must take if an employee is convicted of a drug violation in the workplace:

- (a) First, you must notify Federal agencies if an employee who is engaged in the performance of an award informs you about a conviction, as required by [§ 20.205\(c\)\(2\)](#), or you otherwise learn of the conviction. Your notification to the Federal agencies must\_
  - (1) Be in writing;
  - (2) Include the employee's position title;
  - (3) Include the identification number(s) of each affected award;
  - (4) Be sent within ten calendar days after you learn of the conviction; and
  - (5) Be sent to every Federal agency on whose award the convicted employee was working. It must be sent to every awarding official or his or her official designee, unless the Federal agency has specified a central point for the receipt of the notices.
- (b) Second, within 30 calendar days of learning about an employee's conviction, you must either\_
  - (1) Take appropriate personnel action against the employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973 ([29 U.S.C. 794](#)), as amended; or
  - (2) Require the employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for these purposes by a Federal, State or local health, law enforcement, or other appropriate agency.

[§ 20.230 How and when must I identify workplaces?](#)

- (a) You must identify all known workplaces under each Department of the Treasury award. A failure to do so is a violation of your drug-free workplace requirements. You may identify the workplaces\_
  - (1) To the Department of the Treasury official that is making the award, either at the time of application or upon award; or
  - (2) In documents that you keep on file in your offices during the performance of the award, in which case you must make the information available for inspection upon request by Department of the Treasury officials or their designated representatives.
- (b) Your workplace identification for an award must include the actual address of buildings (or parts of buildings) or other sites where work under the award takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or State highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio studios).
- (c) If you identified workplaces to the Department of the Treasury awarding official at the time of application or award, as described in [paragraph \(a\)\(1\)](#) of this section, and any workplace that you identified changes during the performance of the award, you must inform the Department of the Treasury awarding official.

Per this guidance, I certify that [Company Name] has implemented, or will implement prior to scope of work execution, a Drug-Free Workplace Policy that complies with the above-quoted Subpart B (as well as all applicable portions of 31 C.F.R. Part 20):

Vendor Authorized Representative Signature: \_\_\_\_\_

PRINT NAME AND TITLE: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

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

## CERTIFICATION REGARDING LOBBYING

*(To be submitted with each bid or offer exceeding \$100,000)*

The undersigned certifies, to the best of his or her knowledge and belief, that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c) The undersigned shall require that the language paragraph 1 and 2 of this anti-lobbying certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995).

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Printed Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

**Please Complete the Below Statement (if applicable):**

Yes	Statement
	<b>This provision does NOT apply because my pricing quote does not exceed \$100,000. The Lobbying Disclosure in Attachment I is not applicable.</b>

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Printed Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

## LOBBYING DISCLOSURE

The Responder shall provide, as part of the submission, a completed Disclosure of Lobbying Activities form provided below.

### Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

<b>1. Type of Federal Action:</b> <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. Report Type:</b> <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
<b>4. Name and Address of Reporting Entity:</b> <input type="checkbox"/> Prime <input type="checkbox"/> SubContractor/Vendor  Tier_____, if Known:  <b>Congressional District, if known:</b>	<b>If Reporting Entity in No. 4 is SubContractor/Vendor, Enter Name and Address of Prime:</b>   <b>Congressional District, if known:</b>	
<b>Federal Department/Agency:</b>	<b>7. Federal Program Name/Description:</b>  CFDA Number, if applicable: _____	
<b>Federal Action Number, if known:</b>	<b>9. Award Amount, if known:</b>  \$	
<b>10. a. Name and Address of Lobbying Registrant</b> <i>(if individual, last name, first name, MI):</i>	<b>b. Individuals Performing Services</b> <i>(including address if different from No. 10a)</i> <i>(last name, first name, MI):</i>	
<b>11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</b>	<b>Signature:</b> _____  <b>Print Name:</b> _____  <b>Title:</b> _____  <b>Telephone No.:</b> _____ <b>Date:</b> _____	
<b>Federal Use Only</b>	<b>Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)</b>	

## NJ CONSCIENTIOUS EMPLOYEE PROTECTION (WHISTLEBLOWER) ACT

Per the **Conscientious Employee Protection Act (“Whistleblower Act”)** flyer provided in this Exhibit - I have read and will comply.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE \_\_\_\_\_

# Conscientious Employee Protection Act “Whistleblower Act”

## Employer retaliatory action; protected employee actions; employee responsibilities

1. New Jersey law prohibits an employer from taking any retaliatory action against an employee because the employee does any of the following:
  - a. Discloses, or threatens to disclose, to a supervisor or to a public body an activity, policy or practice of the employer or another employer, with whom there is a business relationship, that the employee reasonably believes is in violation of a law, or a rule or regulation issued under the law, or, in the case of an employee who is a licensed or certified health care professional, reasonably believes constitutes improper quality of patient care;
  - b. Provides information to, or testifies before, any public body conducting an investigation, hearing or inquiry into any violation of law, or a rule or regulation issued under the law by the employer or another employer, with whom there is a business relationship, or, in the case of an employee who is a licensed or certified health care professional, provides information to, or testifies before, any public body conducting an investigation, hearing or inquiry into quality of patient care; or
  - c. Provides information involving deception of, or misrepresentation to, any shareholder, investor, client, patient, customer, employee, former employee, retiree or pensioner of the employer or any governmental entity.
  - d. Provides information regarding any perceived criminal or fraudulent activity, policy or practice of deception or misrepresentation which the employee reasonably believes may defraud any shareholder, investor, client, patient, customer, employee, former employee, retiree or pensioner of the employer or any governmental entity.
  - e. Objects to, or refuses to participate in, any activity, policy or practice which the employee reasonably believes:
    1. is in violation of a law, or a rule or regulation issued under the law or, if the employee is a licensed or certified health care professional, constitutes improper quality of patient care;
    2. is fraudulent or criminal; or
    3. is incompatible with a clear mandate of public policy concerning the public health, safety or welfare or protection of the environment. N.J.S.A. 34:19-3.
2. The protection against retaliation, when a disclosure is made to a public body, does not apply unless the employee has brought the activity, policy or practice to the attention of a supervisor of the employee by written notice and given the employer a reasonable opportunity to correct the activity, policy or practice. However, disclosure is not required where the employee reasonably believes that the activity, policy or practice is known to one or more supervisors of the employer or where the employee fears physical harm as a result of the disclosure, provided that the situation is emergency in nature.

### CONTACT INFORMATION

Your employer has designated the following contact person  
to receive written notifications, pursuant to paragraph 2 above (N.J.S.A. 34:19-4):

Name: COLONEL (RET.) JOHN E. LANGSTON, HR DIRECTOR

Address: HR-NJDMAVA, 101 Eggert Crossing Road, PO Box 340, Trenton, N

Telephone Number: (609) 530-6885

***This notice must be conspicuously displayed.***

Once each year, employers with 10 or more employees must distribute notice of this law to their employees.

If you need this document in a language other than English or Spanish, please call (609) 292-7832.

AD-270 (8/11)

NEW JERSEY DEPARTMENT OF

**LWD**

LABOR AND WORKFORCE DEVELOPMENT  
n j . g o v / l a b o r

## **Increasing Seat-Belt Usage & Reducing Text Messaging While Driving**

Increasing Seat Belt Use in the United States. Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Recipient should encourage its contractors to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented or personally owned vehicles.

Reducing Text Messaging While Driving. Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Recipient should encourage its employees, subrecipients, and contractors to adopt and enforce policies that ban text messaging while driving, and Recipient should establish workplace safety policies to decrease accidents caused by distracted drivers.

## APPENDIX

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CONTRACT AND BOND (SAMPLE)



For: **Bid No. and Title:** \_\_\_\_\_

---

CONTRACT & BOND

---

**(Sample Contract)**

Office of General Counsel  
Camden County College  
P.O. Box 200  
Blackwood, NJ 08012  
Phone (856) 227-7200 x 4860  
Direct Phone: (856) 374-4860  
Direct Fax 856-374-4892

**AGREEMENT BY AND BETWEEN CAMDEN COUNTY COLLEGE AND  
(Company)**

THIS AGREEMENT, made effective as of this \_\_\_ day of \_\_\_\_, 2024, by and between the Board of Trustees of Camden County College, a body politic and corporate of the State of New Jersey, pursuant to N.J.S.A.18A:64A-1 et seq., and located at 200 College Drive, PO Box 200, Blackwood, NJ 08012 hereinafter called "College" or "CCC" and, **(Bidder)**, located at **(Address)**, hereinafter called "Contractor":

**WITNESSETH**

In consideration of the mutual promises herein contained, the parties agree as follows:

**1. Labor and Materials**

The Contractor hereby agrees to furnish all the applicable and necessary labor, materials and supplies required to complete the construction of the **(Project)**, and to work effectively, and in accordance with the terms of the Camden County College portion of the bid entitled and under **(Bid Number and Project Name)**, as it applies to the buildings belonging to the College and listed herein below in the referenced documents..

**2. Term**

a) The term of this agreement shall be for the period **(Project Time)** from the date of execution of the agreement.

b) the provisions as set forth in herein and in the submitted bid surviving the term above.

**3. Specifications**

The Contractor agrees to do the work required in strict conformity with the

specifications prepared by the Camden County College Purchasing Department, Blackwood, New Jersey, which specifications amendments, and addendums are included as exhibits hereto and incorporated by reference and so made a part of the agreement as fully and with the same effect as if the same had been set forth in the body of this agreement.

In the event anything contained within this agreement is in contrast to, or disagreement with those specifications, those specifications shall prevail, unless stated otherwise, and also in conformance with the Bid itself and as modified by any Addendum or clarifications.

And to the extent expressed elsewhere to the contrary notwithstanding regardless of where expressed in the Specifications or bid it shall between the parties be that:

- a) All references to the County there shall mean the College; and
- b) To the Freeholders shall mean the College's Governing Body, the Board of Trustees; and
- c) The Board of Trustees has made the Designated Representative of the College Pursuant to Resolution 2016-268 and for the purposes of Resolution 2016-268, The President, and he has designated Executive Director of Financial Administrative Services, Maris Kukainis; and
- d) No interest or penalty shall be paid by the College regardless of any language to the contrary notwithstanding; and
- e) All employees of the contractor and of its subcontractors who shall be utilized on the College's properties or accessing any College property or data, shall have passed an annual security and background check and shall have no felony convictions.

**4. Indemnification**

The Contractor shall assume all risk of and responsibility for, and agrees to indemnify, defend, and save harmless the College and its Trustees, agents, officials and employees from and against any and all claims, demands, suits, actions, recoveries, losses and damages, judgments, costs and expenses in connection therewith on account of the loss of life, property or injury or damage to the College or to any person, body or property of any person or persons whatsoever, which shall arise from or result directly or indirectly from actions or inaction of the contractor, or its agents or employees, or the work and/or materials supplied under this contract. This indemnification obligation is not limited by, but is in addition to the insurance obligations contained in this agreement.

**5. Suppliers or/and Subcontractors**

The Contractor agrees to make payment of all proper charges for material and supplies of any kind required to be used in the aforementioned work. The Contractor agrees to defend, indemnify and hold harmless the College with respect to any suit filed by any subcontractor for any damages, liability, attorney's fees and costs of suit with regard to the aforementioned materials supplied and warrants and promises not to permit any lien, claim, notice or action to be brought against the College or its property.

The College retains the discretion whether to approve in writing in advance the use of any subcontractors and to set and require any conditions or to deny same. All such use shall be in accordance with all applicable laws and regulations.

**6. Compensation**

The College shall pay the Contractor for the doing of said work and the furnishing of said materials and services in payments throughout the contract term in the contract Base Amount of **\$(Bid Amount)** as an exercise of discretion of the College

pursuant to NJSA 18A:64A-25.20.

**7. Bonding**

The Contractor shall in accordance with the bid at the time of the execution and delivery of this contract to the College, furnish a 100% of a single contract performance bond with a single corporate surety thereon in the aggregate amount of **(Bid Amount In Words) (\$Bid Amount in Numbers)** for the Base Bid in order to guarantee the compliance by the Contractor with the terms of this agreement in favor of the College.

**8. Prevailing Wage**

Where and if applicable, the Contractor shall see to it that all persons employed in the doing of the work called for by this agreement shall be paid the rate of wage prevailing in the area in accordance with N.J.S.A. 34:11-56.25 et seq. and shall comply with all regulations and requirements with regard to the processing and payment of such.

**9. Insurance Requirements**

It is understood and agreed that certificates of insurance as required in the advertised Bid Specifications must be furnished and attached to this agreement when signed by the Contractor and forwarded to the College. The College must be designated as an "Also Insured" for the period of contract term and the period of prevailing indemnification surviving the contract term. The Vendor shall procure and maintain at his expense, insurance coverage as set forth in the bid and incorporated herein by reference. Such insurance shall be maintained from the time of execution of this Agreement the date of final completion and end of this agreement and shall contain a provision that it may not be cancelled or modified without first providing at least 60 days prior written notice to the Owner. Evidence of insurance shall be provided to Owner within five (5) days of the

execution of this Agreement, and thereafter on each annual anniversary date of the signing of this Agreement until such insurance is no longer required to be maintained hereunder, and at other times as Owner may request. Failure to maintain such insurance is a material breach of this Agreement, and Owner shall have the right to terminate this Agreement immediately upon without providing notice or an opportunity to cure.

a) Workers Compensation and Employers Liability insurance shall be maintained of statutory coverage for New Jersey \$1,000,000 Employer's Liability, Broad Form All-States-Endorsement.

b) Commercial General Liability insurance shall be maintained of \$1,000,000 per occurrence; \$3,000,000 general aggregate. The College shall be named as an additional insured with respect to general liability.

c) Auto Liability shall be maintained at \$1,000,000 per occurrence; \$1,000,000 aggregate. The coverage is required of the operation of any vehicle is required in the performance of the services detailed herein (including but not limited to the use of a vehicle to make on-site visits).

d) Excess Liability (Umbrella Form only) shall be maintained of \$5,000,000 each occurrence; \$5,000,000 general aggregate. Maximum deductible - \$1,000,000 per occurrence.

## **10. Audit**

The Contractor shall be required to maintain all documents and records regarding all aspects and transactions of any kind involving this contract and shall permit the College and/or its independent auditors to have access, at a reasonable time and place, to the records and financial statements necessary to comply with the following audit requirements as applicable:

**Type of Contractor****Audit Requirements**

Non-Profits and Institutions of Higher Education

State Funds - N.J.O.M.B.  
Circular Letter 04-04

Federal Funds- OMB  
Circular A-133 (Revised)

State and Local Governments

State Funds - N.J.O.M.B.  
Circular Letter 04-04

Federal Funds  
OMB Circular A-133 (Revised)

For-Profit

College's requirement of access as detailed above.

Copies of the above-referenced circulars are available upon request from the Camden County College. Relevant records of the Contractor are subject to audit or review by OSC pursuant to N.J.S.A. 52:15C-14(d). This Contractor shall maintain all documentation related to products, transactions or services under 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 in accordance with this contract and NJSA and N.J.A.C. 17:44-2. The Contractor shall maintain such records and shall be obligated in all ways to cooperate in accordance with the College's obligations thereunder, and with insure same by contract with any supplier, material man, or subcontractor.

Failure to comply with this procedure will result in the withholding of any payment due pursuant to this agreement.

## 11. Miscellaneous

a) **Modification:** This agreement may not be amended, altered or modified in any manner except in writing signed by the parties hereto.

b) **Headings & Interpretation:** This section and any other headings contained in this agreement are for reference only and shall not affect the meaning and interpretation of this agreement. There shall not exist nor be exercised any presumption regarding the language used herein or against the authoring party to the contract language.

c) **Invalid Clause:** The invalidity of any clause contained herein shall not render any other provision invalid and the balance of this agreement shall be binding upon all parties hereto.

d) **Entire Agreement:** This agreement shall constitute the entire agreement of the parties and it is acknowledged that there are no "side" or oral agreements relating to the undertaking set forth herein unless executed as an amendment hereto by both parties.

e) **Assignability:** This agreement and all rights, duties and obligations herein may not be assigned by the Contractor without the written permission of the College.

f) **Funding:** This agreement is subject to the availability and appropriation of sufficient funds in each year in which it is in effect.

g) **Waiver:** It is understood and agreed by the parties that a failure or delay in the enforcement of any of the provisions of this agreement by either of the parties shall not be construed as a waiver of those provisions.

h) **Governing Law:** This Agreement shall be governed by, construed, and enforced in accordance with the laws of the State of New Jersey. The parties agree to the exclusive jurisdiction of the Superior Court of the State of New Jersey, Camden



Vicinage; and to require as a condition of this agreement that all third parties, suppliers, material men or agents consent to same as a condition of contract where permitted.

i) **Americans with Disabilities Act**: The Americans with Disabilities Act Provisions set forth in the bid documents are incorporated herein and made a part hereof.

j) **Affirmative Action**: The affirmative action provisions set forth in the bid documents are incorporated herein and made a part hereof.

k) **Licensure**: The Contractor shall maintain all required New Jersey licenses and registrations during the term of this agreement.

l) **Binding Agreement**: This contract shall be binding upon the parties hereto and their respective heirs, executors, administrators, successors or assigns.

m) **Surviving Provisions**: Sections 3, 4, 5, 7, 8, 9, & 10, and any other provision which by its reference or expression is meant to survive the term or termination of this contract shall do so in order to fulfill the intent of their inclusion as a provision herein.

n) **Amendment and Supplement as attached.**

**THIS SECTION INTENTIONALLY LEFT BLANK.**

**IN WITNESS WHEREOF**, the parties hereto have caused this agreement to be executed on the day and year aforesaid.

**WITNESS:**

\_\_\_\_\_  
Name

**(Bidder)**

\_\_\_\_\_  
By (Print Name) \_\_\_\_\_

Title \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_

**CAMDEN COUNTY COLLEGE**

\_\_\_\_\_  
Lovell Pugh-Bassett  
President

Amendment and Supplement to Agreement with  
Camden County College  
Attachments A, B and C

## **Amendment and Supplement to Agreement with Camden County College**

This document amends and supplements the agreement regarding Construction Services by **(Bidder)** with Camden County College for the **(Construction Period)**.

Any language in any document, on any website, or anywhere else notwithstanding, the Parties specifically agree to the following provisions as conditions of contract between them:

- 1) The parties agree this contract is written and is to be interpreted under New Jersey law without regard to conflicts of laws; and agree to exclusive jurisdiction and venue in the Superior Court of the State of New Jersey, Camden vicinage; and
- 2) Terminate for Convenience of the Government: The College may upon no less than 30 days advance written notice terminate this contract, in whole or in part, when it is in the College's interest, any other terms herein notwithstanding.
- 3) Agree that the contract may be executed at a separate time and place by each party; and
- 4) N.J.A.C. § 17:44-2.2 State Mandated authority to audit contract records. Pursuant to the N.J. Administrative Code, this and all other public entities are required to provide that:
  - (a) Relevant records of private vendors or other persons entering into contracts with covered entities are subject to audit or review by OSC pursuant to N.J.S.A. 52:15C-14(d).
  - (b) As of November 15, 2010, all covered entities shall insert the following language in any new contract:

"(The contract partner) 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."
- 5) Parties agree to adopt and incorporate herein by reference the Mandatory State Required language attached hereto at:
  - a) Attachment A- Non-Discrimination provision;
  - b) Attachment B- Americans with Disabilities Act; and
  - c) Absence of investment in Iran- Attachment C- Certification.
- 6) All Requirements and conditions included in any RFQ/RF or bid package issued on behalf of the College are incorporated herein as if set forth at length.

The parties hereto by their authorized representatives agree to all the above.

**For: Camden County College**

**For: (Bidder)**

\_\_\_\_\_

\_\_\_\_\_  
Lovell Pugh-Bassett  
President

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

\_\_\_\_\_

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

Date:

\_\_\_\_\_

Rev 040616

**ATTACHMENT A**  
**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 et seq.**

**GOODS, GENERAL SERVICES, AND PROFESSIONAL SERVICES  
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, affection- al 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 apprentice- ship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

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

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union of the contractor's commitments under this chapter 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.

The contractor or subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with N.J.A.C. 17:27-5.2.

## EXHIBIT A (Cont.)

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it does not discriminate on the basis of age, race, creed, color, or national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if

necessary, to assure that all personnel testing conforms with the principles of job related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval;

Certificate of Employee Information Report; or Employee Information Report Form AA-302 (electronically provided by the Division and distributed to the public agency through the Division's website at: [http://www.state.nj.us/treasury/contract\\_compliance](http://www.state.nj.us/treasury/contract_compliance)).

The contractor and its subcontractors shall furnish such reports or other documents to the Division of Purchase & Property, CCAU, EEO Monitoring Program as may be requested by the office 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 Division of Purchase & Property, CCAU, EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.



**ATTACHMENT B**  
**AMERICANS WITH DISABILITIES ACT**  
**Mandatory Language**  
Equal Opportunity for Individuals with Disabilities.

The Contractor and the County do hereby agree that the provisions of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. s12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the County pursuant to this contract, the Contractor agrees that the performance shall be in strict compliance with the Act. In the event that the Contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the Contractor shall defend the County in any action or administrative proceeding commenced pursuant to this Act. The Contractor shall indemnify, protect, and save harmless the County, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation.

The Contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the County's grievance procedure, the Contractor agrees to abide by any decision of the County, which is rendered pursuant to, said grievance procedure. If any action or administrative proceeding results in an award of damages against the County or if the County incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the Contractor shall satisfy and discharge the same at its own expense.

The County shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the County or any of its agents, servants, and employees, the County shall expeditiously forward or have forwarded to the Contractor every demand, complaint, notice, summons, pleading, or other process received by the County or its representatives.

It is expressly agreed and understood that any approval by the County of the services provided by the Contractor pursuant to this contract will not relieve the Contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Owner pursuant to this paragraph.

It is further agreed and understood that the Owner assumes no obligation to indemnify or save harmless the Contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this agreement. Furthermore, the Contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the Contractor's obligations assumed in this agreement, nor shall they be construed to relieve the Contractor from any liability, nor preclude the Owner from taking any other actions available to it under any other provisions of this agreement or otherwise at law.

**Attachment C**

**DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

**PART 1: CERTIFICATION VENDORS/CONTRACTORS/FIRMS MUST COMPLETE PART 1 BY CHECKING EITHER BOX. FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.**

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at: <http://www.state.nj.us.treasury/purchase/pdf/Chapter25List.pdf>

Vendors/Contractors/Firms **must** review this list prior to completing the below certification. **Failure to complete the certification and return it with the required contract paperwork will render a contract proposal non-responsive and the contract will be rejected.** If the Director finds a person or entity to be in violation of law, she/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

**PLEASE CHECK THE APPROPRIATE BOX:**

**I certify, pursuant to Public Law 2012, c. 25, that neither the vendor/contractor/firm listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012 c. 25, ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. I will skip Part 2 and sign and complete the Certification below.**

OR

**I am unable to certify as above because the vendor/contractor/firm and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 List. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.**

**PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN - add additional sheets if necessary.**

You must provide a detailed, accurate and precise description of the activities of the contracting person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing below:

Name of Entity: \_\_\_\_\_ Relationship to Bidder: \_\_\_\_\_

Description of Activities: \_\_\_\_\_  
\_\_\_\_\_

Duration of Engagement: \_\_\_\_\_ Anticipated Cessation Date: \_\_\_\_\_

Bidder/Offeror Contact Name: \_\_\_\_\_ Contact Phone: \_\_\_\_\_

**Sign Certification - next page**

**DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

**VENDOR/CONTRACTOR/FIRM: (Bidder)**

**Certification:**

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

Full Name (Print): \_\_\_\_\_

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

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

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

## A201 GENERAL CONDITIONS

## General Conditions of the Contract for Construction

for the following PROJECT:

*(Name and location or address)*

Camden County College Smoke Tower Structure  
420 N. Woodbury-Turnersville Road  
Blackwood, NJ 08021

THE OWNER:

*(Name, legal status and address)*

Camden County College  
PO Box 200, 200 College Drive, Blackwood, NJ 08021  
135 Roosevelt Hall

THE ARCHITECT:

*(Name, legal status and address)*

Bach Associates, PC  
304 White Horse Pike  
Haddon Heights, New Jersey 08035

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### ADDITIONS AND DELETIONS:

This document is incorporated as added information added for its completion to the contract and is read together with the standard form Additions and Deletions Report that sets forth information as to the relationship to the standard form that is incorporated from the contract and so-called amendments to the contract. This document is incorporated into the contract as added information and the contract as added to or deleted from the original form. This document is important to the contract as a condition of the contract and is incorporated into the contract to its completion or modification.

**ELECTRONIC COPYING** of this contract is prohibited. Do not attempt to photocopy, reproduce, or otherwise disseminate or distribute this contract or its contents without the express written consent of the copyright owner.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. 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 Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner 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 duties.

§ 1.1.3 THE WORK

The term "Work" means 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.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings 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, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

§ 1.7 EXECUTION OF CONTRACT DOCUMENTS

§ 1.7.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon Request. ***The Agreement shall be signed in not less than quadruplicate by the Owner and Contractor.***

§ 1.7.2 Execution of the contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with the local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. ***Execution of the contract by the Contractor is a representation that said Contract Documents are full and complete, are sufficient to have enabled the Contractor to determine the cost of the Work therein to enter into the Contract and that the Contract Documents are sufficient to enable it to construct the Work outlined therein, and otherwise to fulfill all its obligations hereunder, including, but not limited to, Contractor's obligation to construct the Work for an amount not in excess of the Contract Sum on or before the date(s) of Substantial Completion established in the Agreement. The Contractor further acknowledges and declares that it has visited and examined the site, examined all physical, legal, and other conditions affecting the Work and is fully familiar with all of the conditions thereon and thereunder affecting the same. In connection therewith, Contractor specifically represents and warrants to Owner that it has, by careful examination, satisfied itself as to: (1) the nature, location and character of the Project and the site, including, without limitation, the surface and subsurface conditions of the site and all structures and obstructions thereon and thereunder, both natural and man-made, and all surface and subsurface water conditions of the site and the surrounding area; (2) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (3) the quality and quantity of all materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the***

*manner and within the cost and time frame required by the Contract Documents, In connection with the foregoing, and having carefully examined all Contract Documents, as aforesaid, and having visited the site, the contractor acknowledges and declares that it has no knowledge of any discrepancies, omissions, ambiguities, or conflicts in said Contract Documents and that if it becomes aware of any such discrepancies, omissions, ambiguities, or conflicts, it will promptly notify Owner and Architect of such fact.*

§ 1.7.3 *The Contract Documents include all items necessary for the proper execution and completion of the Work by the Contractor. The Work shall consist of all items specifically included in the Contract Documents as well as all additional items of work which are reasonably inferable from that which is specified in order to complete the Work in accordance with the Contract Documents, The Contract Documents are complementary, and what is required by any one Contract Document shall be as binding as if required by all. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to the Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.*

*If any such differences or conflicts were not called to the Owner's and Architect's attention prior to submission of bids, the Architect shall decide which of the conflicting requirements will govern based upon the most stringent of the requirements, and, subject to the approval of the Owner, the Contractor shall perform the Work at no additional cost and/or time to the Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results.*

§ 1.7.3.1 The term "reasonably inferable" includes work necessary to "provide" work indicated or specified, as defined in section: Definitions and Standards; that is: furnish and install, complete, in place and ready for use.

§ 1.7.3.2 Details referenced to portions of the Work shall apply to other like portions of the Work not otherwise details.

§ 1.7.3.3 The Contractor shall request the Architect/Engineer's interpretation of apparent discrepancies, conflicts, or omissions in the Specifications and Drawings. Subcontractors shall forward such requests through the Contractor. Such requests, and the Architect/Engineer's interpretation, shall be in written form; other forms of communications shall be used to expedite resolution of concerns, but will not be binding.

§ 1.7.4 Explanatory notes shall take precedence over conflicting drawn note indications. Large scale drawings shall take precedence over small scale drawings. Figured dimensions shall take precedence over scaled measurements. Should contradictions be found, the Architect shall determine which indication is correct.

§ 1.7.5 When more than one material, brand, or process is specified for a particular item of Work, the choice shall be the Contractor's. Contractor may, after notifying the Architect and Owner, select the one it considers to be the best. Approval by Architect or Owner of materials, suppliers, processes, or Subcontractors does not imply a waiver of any Contract requirements including, without limitation, Contractor's warranty.

§ 1.7.6 In all cases, the details, drawings, and specifications shall be checked with existing conditions and with work in place, and variations, if any, shall be referred by the Contractor to the Architect for adjustment, as the Contractor will be responsible for the fit or work in place.

§ 1.7.7 When a profile, section or other finished condition is shown, furring or other method of obtaining such finished conditions shall be provided. The drawings may show work fully drawn out or only a portion thereof, the remainder being in outline, the drawn out portions apply to other like or similar places.

§ 1.7.8 Where it is required in the specifications that materials, products, processes, equipment, or the like be installed or applied in accordance with manufacturer's instructions, directions, or specifications, or words to this effect, it shall be construed to mean that said application or installation shall be in strict accordance with printed material concerned for use under conditions similar to those at the job site. Three copies of such instructions shall be furnished to the Architect and his written approval thereof obtained before work is begun.



§ 1.7.9 Any material specified by reference to the number, symbol, or title of a Commercial Standard, Federal Specification, ASTM Specification, trade association standard, or other similar standards, shall comply with the requirements in the latest revision thereof and any amendments or supplements thereto in effect one month prior to the date on which bids are opened and read except as limited to type, class, or grade, or modified in such reference. The standards referred to, except as modified in the specifications, shall have full force and effect as through printed in the specifications. The Architect will furnish upon request information as to how copies of the standards referred to may be obtained.

## ARTICLE 2 OWNER

### § 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

*(Paragraph deleted)*

### § 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.2 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

*(Paragraphs deleted)*

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or fails to carry out Work in accordance with the Contract Documents, *or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, through, or under Contractor, or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents*, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## ARTICLE 3 CONTRACTOR

### § 3.1 GENERAL

*(Paragraph deleted)*



shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor, when requested by the Architect, shall meet with representative of the Architect at all times and furnish all information requested; he shall allow the Architect to inspect the work at all times. Neither the Owner, nor the Architect shall be liable to the Contractor for extra compensation or damages for interference or delays on account of any such meetings, information, or inspections so requested or other acts of the Architect done in good faith and within the scope of their employment by the Owner.

§ 3.3.4.1 In addition the Contractor is entrusted with the oversight, management control, and general direction of this project to insure that all contract completion dates are met. In the event that there are any delays caused to any subcontractor on this project, liability shall lie with the Contractor and not with the Owner.

§ 3.3.5 The contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions and that they provide materials on time. The Contractor shall coordinate its Work with that of all others on the Project including deliveries, storage, installations, and construction utilities. The contractor shall be responsible for the space requirements, locations, and routing of its equipment. In areas and locations where the proper and most effective space requirements, locations and routing cannot be made as indicated, the Contractor shall meet with all others involved, before installation, to plan the most effective and efficient method of overall installation.

§ 3.3.6 The Contractor shall establish and maintain bench marks and all other grades, lines and levels necessary for the Work, report errors or inconsistencies to the Architect before commencing Work, and review the placement of the building(s) and permanent facilities on the site with the Owner and Architect after all lines are staked out and

before foundation Work is started. Contractor shall provide access to the Work for the Owner, the Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by contractor or its Subcontractor (of any tier) on adjacent properties due to construction as revealed by an improvement survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of the Contractor, and Contractor shall correct such encroachments within thirty (30 ) days of the improvement survey (or as soon thereafter as reasonably possible), at contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner(s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

**§ 3.3.7 Coordination:**

§ 3.3.7.1 In the case of a single prime Contract, the General Contractor becomes the sole responsible party for the coordination of the entire project, and all other prime contractors shall mean subcontractors; In the case of a multiple Prime Contract, the General Contractor shall also be responsible to coordinate the relationships among the Prime Contractors.

§ 3.3.7.2 The General Contractor shall be responsible to coordinate and expedite the total construction process and all of its parts. The Owner relies upon the organization, management, skill, cooperation and efficiency of the General Contractor to supervise, direct, control and manage the work and to coordinate and expedite the efforts of the other prime contractors and subcontractors so as to deliver the work conforming to the contract within the schedules time. The General Contractor is responsible for Proper sequence and coordination. It shall determine the location of work and resolve conflicts amongst Contractors.

§ 3.3.7.3 The General Contractor and all other prime contractors shall provide a qualified full-time staff member or members (i.e.: project managers, superintendent, or foreman) to oversee their own work and the work of their sub-contractors. Should the Prime contractor be responsible for multiple projects at different sites, then such prime contractor shall provide a separate qualified superintendent for each of the projects. In addition, the General Contractor shall provide a qualified full-time superintendent or members to provide mechanical and electrical coordination and perform coordination with all their subcontractors.

§ 3.3.7.4 The Contractor's superintendent and/or foreman will at all times be subject to the approval of the Architect and Construction manager. The Architect and Construction Manager reserves the right to require the contractor to replace the superintendent and/or foreman if, in the opinion of the Architect and Construction Manager, the superintendent and/or foreman is not performing satisfactorily.

§ 3.3.7.5 Each prime contractor shall coordinate his activities with the activities of other contractors.

§ 3.3.7.6 All questions pertaining to the work are to be made to the Architect/Engineer sufficiently in (via an RFI Form) advance of construction to permit comparisons, investigations, or references to drawings and shop drawings as necessary.

§ 3.3.7.7 The General Contractor is required to submit a site logistics plan coordinating all Owner functions with the access and safety of the job site.

§ 3.3.7.8 The Contractor is required to coordinate all the inspection and material testing to meet the contract document specifications.

§ 3.3.7.9 The Contractor has full and sole responsibility for construction methods and implementation of a "quality control system" to insure coordination.

§ 3.3.7.10 The Contractor is responsible for field verification of all dimensions/measurements for the coordination of materials and trades. Check field dimensions, clearances, relationships to available space, and anchors.

§ 3.3.7.11 The Contractor shall make all necessary arrangements to conduct work so that all parts shall be carried harmoniously and simultaneously or sequentially, so as components or increments of the same shall not interfere or retard the progress of others.

§ 3.3.7.12 Minor changes in locations of equipment, parts, etc due to field conditions shall be made, if so directed, at no additional cost.

§ 3.3.7.13 The Contractor shall coordinate the delivery, unloading, movement, relocation, storage and protection of all materials.

§ 3.3.7.14 The Contractor shall examine the drawings and dimensions and is responsible for satisfactory joining and fitting of all parts of the work.

§ 3.3.7.15 Accurate dimensions, sleeved and opening drawings are to submitted prior to placement in the field.

§ 3.3.7.16 Prepare coordination drawings for all above ceiling areas throughout the entire project. Drawings showing all piping, duct, cabletrays, electrical ductbanks, and similar items, but not electrical conduit less than 4 inches in diameter. Complete architectural, mechanical and electrical reflected ceiling layouts, (including ductwork, conduits, piping, lighting, etc.).

§ 3.3.7.17 The Contractor is responsible for any omissions of the subcontractors and is required to provide a complete operating facility.

§ 3.3.7.18 The General Contractor shall be responsible for preserving the integrity of ceiling heights and room sizes.

#### § 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

#### § 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

#### § 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

#### § 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- 1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- 2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- 3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the

proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified

materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.11 Detailed requirements are specified in the Division 1 section 01300 relating to "Submittals".

§ 3.12.12 All shop drawings are to include manufacturer's data. All shop drawings and samples are to be submitted by the Contractor to the Architect for review. Each sheet of the shop drawings shall identify the project, contractor, subcontractor, and fabricator or manufacturer and the date of the drawings. All shop drawings shall be numbered in consecutive sequence and each sheet shall indicate the total number of sheets in the set.

§ 3.12.13 Substitutions: All substitutions or deviations from plans and specifications must be clearly noted as such on all shop drawings. Contractor shall identify, coordinate and pay for any additional requirements as a result of substitutions, deviations, etc. including necessary change orders. In addition, substitution submittals shall be made no later than 30 days after Notice to Proceed in order to provide time for comparison review.

### § 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.



§ 3.13.1 Location and weights of all equipment and materials that the Contractor intends to place on the slab shall be submitted to the Architect for review.

§ 3.13.2 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

§ 3.13.3 The contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner.

§ 3.13.4 Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any provision of the Contract Documents, Contractor shall use its best efforts to minimize any interference with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work or (2) the Building in the event of partial occupancy, as more specifically described in Paragraph 9.9.

§ 3.13.5 Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including without limitation, lavatories, toilets, entrances and parking areas other than those designated by the Owner. Without limitation of any other provision of the Contract Documents, the Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time.

§ 3.13.6 The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance with any portion of such rules and regulations to be impracticable, setting forth the problems of such and suggest alternatives through which the same results can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives or require compliance with the existing requirements and collective bargaining agreements applicable to use and occupancy of the Project site and the Building

§ 3.13.7 The General Contractor shall provide a temporary construction fence whether shown on the Contract Documents or not as required to separate the area or areas under construction from the Owners area or areas used by the public. The temporary fencing shall be approved by the Owner prior to installation.

### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Each Prime Contractor shall perform all daily clean up and removal of debris from the site including that of his subcontractors. Each Prime Contractor shall maintain an adequate supply of laborers to accomplish daily clean up and removal of debris from the site and work areas. No debris will be allowed to accumulate in or around the building including masonry debris. This building site must be maintained free of all litter and debris on a daily basis. No accumulation of flammable material is permitted. Prior to installation of finishes the floors will be swept and kept free of dust and dirt until turned over to the owner.

§ 3.15.4 Cleaning and debris removal may be considered a safety concern by judgment of the Owner or his agents and as such the work may be stopped to provide time and labor for immediate clean up.

§ 3.15.5 Final Clean-Up: The General Construction Contractor has the responsibility for the final clean-up and policing of the entire site after other contractors have removed their own waste materials, rubbish, equipment, tools and plant. In addition thereto, the General Construction Contractor shall have a professional cleaning company perform the following immediately prior to the Architect's inspection for Substantial Completion:

§ 3.15.5.1 Removal of all manufacturer's temporary labels from materials, equipment and fixtures.

§ 3.15.5.2 Removal of all stains from glass and mirrors; wash, polish, inside and outside.

§ 3.15.5.3 Removal of marks, stains, finger prints, other soil, dust, dirt, from painted, decorated, or stained woodwork, plaster or plasterboard, metal, acoustic tile, and equipment surfaces.

§ 3.15.5.4 Remove spots, paint, soil, from resilient flooring.

§ 3.15.5.5 Remove temporary floor protections; clean, strip and provide three (3) coats of wax on new VCT floors or otherwise treat as directed by the material manufacturer's recommendation, all finished floors. Final vacuum all carpet.

§ 3.15.5.6 Clean all interior finished surfaces, including doors and window frames, and hardware required to have a polished finish, of oil, stains, dust, dirt, paint, and the like; leave without finger prints, blemishes.

§ 3.15.5.7 Final site clean-up shall extend beyond the Contract Limit Lines as reasonably required to insure the complete removal of all construction debris from the entire site, including staging areas.

### § 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.16.1 The Contractor shall promptly notify the Architect/Engineer and Owner of the presence of hazardous conditions at the site, including the start of hazardous operations or the discovery or exposure of hazardous substances.

§ 3.16.2 Contractor shall be responsible for snow plowing and snow removal as required to maintain access/egress to construction area.

§ 3.16.3 Contractor shall keep only necessary equipment on site and shall cooperate with the Owner regarding location of stored material.

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a 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. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.1.1 Contractor for itself, its successors and assigns, agrees to indemnify and save Owner, its successors, assigns, employees, agents, architects and engineers, harmless from, and against any and all claims, demands, damages, actions or causes of action, together with any and all losses, costs or expenses in connection therewith or related thereto, including but not limited to attorney fees for costs of suit, for bodily injuries, death or property damage arising in or in any manner growing out of the work performed, or to be performed under this Contract whether or not caused by fault or negligence of Owner. Contractor, for itself, its successors and assigns, hereby expressly agrees to waive any provision of the applicable State’s Workers’ Compensation Act, including Section 303(b), whereby the contractor could preclude its joinder as an additional defendant or avoid liability for damages, Contribution or Indemnity in any action at law, or otherwise where Contractor’s employee or employees, heirs, assigns or anyone otherwise entitled to receive damages by reason of injury or death brings an action at law against the Owner, its successors, assigns employees, agents, engineers or architects, Contractor, of itself, its successors and assign, agrees to indemnify the Owner, its successors, assigns, employees, agents, architects, Construction Manager and engineers against all fines, penalties or losses incurred for, including but not limited to attorney fees and costs of suit, or by reason of the violation by Contractor in the performance of this Contract, of any ordinance, regulation, rule of law of any political subdivision or duly constituted public authority. Without limiting the foregoing, the Contractor, at the request of Owner, its successors, assigns, employees, agents, architect, Construction Manager or engineers, agrees to defend at the Contractor’s expense any suit or proceeding brought against Owner, its successors, assigns, employees, agents, architect, Construction Manager or engineers, due to, or arising out of the work performed by the Contractor.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers’ compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner’s representative during construction until the date the Architect issues the final Certificate for Payment.

The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

*(Paragraph deleted)*

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

### § 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by

terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

*(Paragraphs deleted)*

§ 5.3.1 The Contractor shall obligate each subcontractor specifically to comply with the New Jersey Plan of Affirmative Action to avoid discriminatory practice in employment.

§ 5.3.2 The Contractor shall obligate each subcontractor to comply with the applicable prevailing wage schedule of the Department of Labor of the State of New Jersey.

§ 5.3.3 The Contractor shall obligate each Subcontractor to comply with the Public Works Contractor Registration Act of the State of New Jersey.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK. All trades have a mutual obligation to coordinate their work with the other trades and cooperate as necessary with the Contractor, Construction Manager if applicable, and the Construction schedule – to complete the work as required by the Owner. The Construction Manager if applicable will provide assistance to the Contractor for coordination between their work and the Owner. The Contractor is required to have their superintendent or foreman on site at all times when their work or that of their subcontractors is in progress.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, *should the Contractor be damaged by any other separate Contractor on the work by reason of such other Contractor's failure to perform properly his Contract with the Owner, no action will lie against the Owner and the Owner shall have no liability therefore, but the Contractor may assert his claim for damage against such separate Contractor as a third party beneficiary under the Contract between such other Contractor and the Owner.*

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5, *should the Contractor be damaged by any other separate Contractor on the work by reason of such other Contractor's failure to perform properly his Contract with the Owner, no action will lie against the Owner and the Owner shall have no liability therefore, but the Contractor may assert his claim for damage against such separate Contractor as a third party beneficiary under the Contract between such other Contractor and the Owner.*

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible as the Owner determines to be just, based on the recommendation of the Architect.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.1.1 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim therefor unless it shall, prior to complying with same and in no event no later than 10 working days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone in accordance with Section 7.4.1.

§ 7.1.2.1 **"Neither this Contract nor the Work to be performed hereunder can be changed by oral agreement. No course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work and no claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether there is, in fact, any unjust enrichment to the Work, shall be the basis for any alleged implied agreement by the Owner to the change, any alleged waiver of the Owner's rights under this Contract**

or any increase in any amounts due under the Contract or any or a change in any time period provided for in the Contract Documents."

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 A directive or order from the Owner or the Architect, other than a Change Order, a Construction Change Directive or any Order for a minor change pursuant to this Article 7, shall not be recognized as having any impact on the Contract Sum or the Contract Time and the Contractor shall have no claim therefore. If the Contractor believes that a directive or order would require it to perform work not required by the Contract Documents, the Contractor shall so inform the Owner and Architect in writing prior to complying with the same and in no event any later than five (5) working days from the day such direction or order was given, and shall submit to the Owner and Architect for the Owner's and Architect's approval its change proposal.

## § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Any change in work authorized in writing by the Owner and Architect that will require a change in the cost of the work, whether an additive or deductive change in cost, shall show a complete cost breakdown of labor, material, equipment and insurance, and appropriate overhead and profit in accordance with 7.3.6 and 7.3.6.1.

§ 7.2.3 When a Change Order involves both additions and deletions in material, the net quantity is to be determined and the overhead and profit is to be applied to the net quantity in accordance with 7.3.6 and 7.3.6.1.

§ 7.2.4 When a Change Order involves deletions in materials and labor, the amount of the credit will be equal to the line item on the Schedule of Values or a unit of the value if only a portion of the value is being deleted.

§ 7.2.5 When any change in the Work, regardless of the reason therefore, requires or is alleged to require an adjustment in Contract Time, such request for time adjustment shall be submitted by the Contractor as part of the change proposal. Any Change Order approved by the Owner and for which payment is accepted by the Contractor, in which no adjustment in Contract Time is stipulated, shall be understood to mean that no such adjustment is required by reason of the change, and any and all rights of the Contractor or any subsequent request of adjustment of Contract Time by reason of the change is waived.

§ 7.2.6 Request by the Contractor for adjustment of the Contract Amount regardless of the reason therefore, shall be submitted to the Architect and the Owner with itemized labor and material quantities and unit prices to permit proper evaluation of the request. A submission by the Contractor containing unsubstantiated lump sum requests for adjustment of the Contract Amount will not be considered by the Owner and Architect. The Owner and Architect will not be liable for any delay incurred by reason of the Contractor's failure to submit satisfactory justification and back-up with any request for adjustment to the Contract Amount.

§ 7.2.7 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the initial Work which is the subject of the Change Order, including, but not limited to, all direct or indirect costs associated with such change and any and all adjustment to the Contract Sum and the Construction Schedule. The contractor will not be entitled to any compensation for additional work or delays in the Construction Schedule not included in the Change Order

## § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes



in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation as prepared by the Architect;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an allowance for overhead in accordance with the schedule set forth in Subparagraph 7.3.7.1 below, or if no such amount is set forth, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

§ 7.3.7.1 In Subparagraph 7.3.7 the allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule and may only include a Contractor, his Subcontractor and his sub-subcontractor:

7.3.7.1.1 For the Contractor, for any work performed by the Contractor's own forces, 15% of the cost.

7.3.7.1.2 For the Contractor, for any work performed by his Subcontractor, 5% of the amount due the Subcontractor.

7.3.7.1.3 For each Subcontractor or Sub-subcontractor involved, for any Work performed by that contractor's own forces, 10% of the cost.

7.3.7.1.4 For each Subcontractor, for any Work performed by his Sub-subcontractor 10% of the amount due the Subcontractor.

7.3.7.1.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.7.

7.3.7.1.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontractors, they shall be itemized also. In no case will a change involving over \$200.00 be approved without such itemization.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

### ARTICLE 8 TIME

#### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

*(Paragraph deleted)*

§ 8.1.2.1 The work to be performed under this Contract shall commence after the required insurance has been obtained and approved and within three days after issuance of the Notice to Proceed by the Owner. The Contract Time shall commence as of the date of the Notice to Proceed unless otherwise specified in the agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article II to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.4 Owner, or his representative, in coordination with the Contractor, shall set work hours. Contractor may be required to work nights, weekends or holidays as necessary to complete the work in accordance with the Schedule or in coordination with the Owner's activities. Under no circumstances shall the Contractor begin or continue with work that is adversely impacting activities or operations. All utility shutdowns, interruptions, work in or adjacent to existing buildings will be coordinated through the Owner. Or his representative, and may have to be performed during hours when the Owner's activities are not in operation. All cutting, hammering or other activity that is noisy, produces smoke or fumes or is otherwise disruptive to the Owner's operations may have to be done during hours when the Owner's activities are not in operation. Work required to be performed during non-operating hours, as determined by the Owner or his representative, will be performed at no additional cost to the Owner.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by occurrences beyond the control and without the fault or negligence of the Contractor and which by the exercise of reasonable diligence the Contractor is unable to prevent or provide against, including labor disputes (other than disputes limited to the work force of, or provided by, the Contractor or its Subcontractors), fire, unusual delay in deliveries not reasonably anticipatable, unavoidable casualties, or by other occurrences which the Architect, subject to the Owner's approval, determines may justify delay, then, provided that the Contractor is in compliance with Subparagraph 4.3.3 hereof, the Contract Time shall be extended by Change Order or Construction Change Directive for the length of time actually and directly caused by such occurrence as determined by the Architect and approved by the Contractor and Owner (such approval not to be unreasonably withheld, delayed or conditioned); provided, however, that such extension of Contract Time shall be net of any delays caused by or due to the fault or negligence of the Contractor or which are otherwise the responsibility of the Contractor and shall also be net of any contingency or "float" time allowance included in the Contractor's construction Schedule. The Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with the Architect and Owner to minimize and mitigate the impact or any such occurrence and do all things reasonable under the circumstances to achieve this goal.

*(Paragraph deleted)*

§ 8.3.2.1 Any claim for extension of time should be made in writing to the Architect not more than five (5) days after the commencement of the delay, otherwise, it should be waived. The Contractor shall provide an estimate of the possible effect of such delay on the progress of the work. No claim made beyond the five (5) days shall be valid.

§ 8.3.2.2 The Contractor agrees that if any delay in the Contractor's works unnecessarily delays the work of any other Contractor or Contractors, the Contractor shall in that case pay all costs and expenses incurred by such parties due to such delays and hereby authorizes the Owner to deduct the amount of such costs and expenses from any moneys due or to become due the Contractor under this Contract. The Architect shall be responsible for ascertaining whether the Contractor is responsible for delaying any of the work of any other Contractor. His decision shall be final.

§ 8.3.2.3 Notwithstanding anything to the contrary in the Contract Documents, any extension of the Contract Time, to the extent permitted under Paragraph 8.3.1, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity or (4) other similar claims (collectively referred to in this Paragraph 8.3.2.3 as "delays"), whether or not such delays are foreseeable, unless a delay is caused by acts of the Owner constituting active interference with the Contractor's performance of the Work and only to the extent such acts continue after the Contractor furnishes the Owner with written notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any delay including without limitation consequential damages, lost opportunity cost, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including without limitation ordering changes in the Work or directing suspension, rescheduling or correction of the Work) regardless of the extent or frequency of the

Owner's exercise of such rights or remedies shall not be construed as an act interference with the Contractor's performance of the Work.

§ 8.3.2.4 The Contractor agrees that the Owner can deduct from the Contract Sum, any wages paid by the Owner to any Inspector or Architect or other professional necessarily employed by the Owner for any number of days in excess of the number of days allowed in the specifications for completion of work.

§ 8.3.2.5 Where the cause of delay is due to weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the previous sentence shall be construed according to this formula: Average rainfall (or snow or low temperature) for the past five years.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

#### § 9.1.1 Payment Procedures shall be as follows:

9.1.1.1 Contractor shall submit Schedule of Values to Construction Manager and Architect for review

9.1.1.2 Prior to end of each pay period, Contractor shall submit a rough draft ("pencil copy ") for their payment application for review and approval by the Architect and the Construction Manager.

9.1.1.3 Upon approval of pencil copy, Contractor shall submit at least five copies of their payment application to the Architect for approval along with their certified payrolls and monthly manning reports.

9.1.1.4 Architect and Construction Manager will approve payments and forward to the Owner.

### § 9.2 SCHEDULE OF VALUES

§ 9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, which in the aggregate equals that total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as the Architect may direct or as required by the Owner. These schedules, when approved by the Architect, Construction Manager (if applicable) and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by the Contractor to the "Applications and Certificate for Payment", and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directive values shall be broken down to show the various subcontracts. The Application for Payment shall be on AIA Document G702 and G703 and the approved Voucher obtainable from the Owner. Each Item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed and value yet to be completed. All blanks and columns must be filled in, including every percentage complete figure.

### § 9.3 APPLICATIONS FOR PAYMENT

The Contractor shall submit to the Architect an itemized Application for Payment for their Contract on AIA Document G702 and G703 and the approved Voucher obtainable from the Owner. Payroll Certification for all employees of all of the workers on the project shall be submitted as well as other such data for the purposes of summarizing the work and tracking the project. The architect and Construction Manager (if applicable) will process the application and forward it with his recommendations to the Owner.

*(Paragraphs deleted)*

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Until substantial completion, the Owner will pay 98% of the amount due the Contractor on account of progress payments. The retainage will be held until final acceptance of the project by the Architect and the Owner. The Contractor shall submit a separate voucher for the full amount of the retainage along with the Consent of Surety, AIA Form G707A and the Contractor shall be required to furnish a Maintenance Bond for 100% of the Project Cost for a period of two (2) years from the Date of Final Acceptance.

§ 9.3.1.4 Upon acceptance of the Work performed pursuant to this Contract for which the Contractor has agreed to the withholding of payments pursuant to Article 9 of this Contract, all amounts being withheld by the Owner shall be paid in accordance with Paragraph 9.3.1.3 without further withholding of any amounts for any purposes whatsoever, provided that the Contract has been satisfactorily completed.

§ 9.3.1.5 Each application for payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and Architect:

§ 9.3.1.5.1 A current contractor's lien waiver and duly executed and acknowledged sworn statement by an officer of the Contractor showing all subcontractors and materialmen with whom the Contractor has entered into subcontracts, the amount of each such subcontract, the amount requested for any subcontractor and materialmen in the requested progress payment and the amount to be paid to the Contractor from such progress payment together with similar sworn statements from all such subcontractors and materialmen

§ 9.3.1.5.2 Duly executed waivers of mechanic's and materialmen's liens from all subcontractors and when appropriate, from materialmen and lower tier subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous application for payment; and

§ 9.3.1.5.3 All information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner or the Architect.

§ 9.3.2 At the Owner's option, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with paragraphs 9.3.2.1, 9.3.2.2, 9.3.2.3, and 9.3.2.4 satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.2.1 With each Application for Payment the Contractor shall submit to the Architect and Owner a written list identifying each location where materials are stored off the Project site and the value of materials at each location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project site in an amount not less than the total value thereof.

§ 9.3.2.2 The consent of any surety shall be obtained to the extent required prior to the payment for any materials stored off the Project site.

§ 9.3.2.3 Representatives of the Owner shall have the right to make inspections of the off site storage areas at any time.

§ 9.3.2.4 Materials stored off site shall be protected from diversion, destruction, theft and damage to the satisfaction of the Owner, shall specifically be marked for use on the Project and shall be segregated from other materials at the storage facility.

§ 9.3.3 The Contractor warrants and agrees that title to all Work will pass to the Owner either by incorporation in the construction or upon receipt of payment therefor by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve Contractor of any of its obligations under the Contract, that the Contractor shall remain responsible for damages to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents, and that no Work

covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

#### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.1.1 The Owner will issue payment to the Contractor pursuant to the Owner's administrative policy at the time that a duly approved Payment Certificate is presented.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

§ 9.5.1.1 defective Work not remedied;

§ 9.5.1.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

§ 9.5.1.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

§ 9.5.1.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

§ 9.5.1.5 damage to the Owner or a separate contractor;

§ 9.5.1.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

§ 9.5.1.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.1.8 The failure of any Contractors to comply with mandatory requirements for maintaining record drawings. The Contractor shall be required to check record drawings each month. Written confirmation that the record drawings are up-to-date shall be required by the Architect before approval of the Contractors monthly payment requisition will be considered.

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

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, 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. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

#### § 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. Notwithstanding Certification by the Architect, the Owner may refuse to make payment based on any default by the Contractor including, but not limited to those defaults set forth in Subparagraphs 9.5.1 through 9.5.1.8. The Owner shall not be deemed in default by reason of withholding payment while any of such defaults by the Contractor remain uncured.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner 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 Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner 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.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

#### § 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not for reasons other than a default of the Contract, including but not limited to those defaults set forth in Subparagraphs 9.5.1.1 through 9.5.1.8 pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by a court of law, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof which the Owner agrees to accept separately is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Work will not be considered substantially complete until all project systems included in the Work are operational as designed and scheduled, all designated or required inspections, certifications, permits, approvals, licenses and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial use and occupancy of the Project are received, designated instruction of Owner's personnel has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that the Owner can occupy the building on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's (or those claiming by, through or under the Owner) normal operations. Contractor recognizes that normal operation requires the use and occupancy of the Work by departmental employees without interruption and that any punchlist or corrective work shall be done at times when the Work is not to be occupied. As a further condition of substantial completion acceptance, the Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the date of substantial completion.

§ 9.8.1.1 In addition to the above, the following items must be completed in order to deem the work Substantially Complete:

- § 9.8.1.1.1 All required final inspections have been completed by the authority having jurisdiction resulting in a TCO or CO.
- § 9.8.1.1.2 Air Balancing Reports: Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical engineer. Final Air and Water Balancing Reports certified by the licensed balancer are required for "Final Acceptance" and the start of the warranty period. (These reports must be submitted in accordance with the shop drawing process to Architect so that they can be tracked and approved and distributed to all applicable parties).
- § 9.8.1.1.3 Equipment Start Up Reports: Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical Engineer. (These reports must be submitted in accordance with the shop drawing process to Architect so that they can be tracked and approved and distributed to all applicable parties).
- § 9.8.1.1.4 Completion of the Owner On-Site ATC Training: Refer to the ATC specifications for training requirements on-site and off-site. The Owner does not have beneficial use of the mechanical system until they can operate it following this training.
- § 9.8.1.1.5 Completion of Commissioning: Refer to the Start-up and Adjustment specifications. This process will require the Owner's Operator, Construction Manager (if applicable) and the Mechanical Engineer on site to witness a demonstration and operation of every mechanical device. The devices shall be operated from the on-site Owner's ATC Computer and verified by the Mechanical Contractor's field personnel to confirm proper operation. In addition to this demonstration, the contractor shall demonstrate Owner required maintenance of all mechanical equipment to maintain the manufacturer's warranty. This should include but not be limited to belt tension/adjustments, filters, etc. Please schedule several days for the commissioning process.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected along with all special warranties required by the Contract Documents endorsed by the Contractor prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.



§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.4.1 The Architects Certificate of Substantial Completion shall be subject to the Owner's final approval.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage sufficient to increase the total payments to 100% of the Contract Sum, less such amounts as the Architect shall determine for all incomplete work and unsettled claims. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### § 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Owner as part of the final application for payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guarantees have been received and accepted by the Owner.

§ 9.10.1.1 The Architect's Certificate of Final Completion shall be subject to the Owner's final approval.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed



§ 9.11.5 The Owner will suffer financial loss if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor (and the Contractor's Surety) shall be liable for and pay to the Owner the sum of \$500.00 stipulated and fixed, agreed as liquidated damages for each calendar day of delay until the Work is substantially complete.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.1.1.1 The Contractor must fully comply with the job safety requirements in addition to all Federal, State and Local safety guidelines. All cost associated with complying with all safety requirements shall be included in each contractor's base bid.

§ 10.1.1.2 The General Contractor will serve as the overall Project Safety Coordinator and shall be responsible for all issues of safety and protection. The Contractor shall designate a safety person at the job site while the contractor is working on the project site. The designated safety person shall be responsible for the safety of their work and for their workers and to make continuous inspections for all safety issues relating to his work. The Construction Manager (if applicable) is not responsible for safety on this project but will endeavor to promote safety. Each Contractor must comply with job Safety Requirements in addition to OSHA and local agency requirements. Failure to comply with safety issues will be grounds for withholding of payments.

§ 10.1.1.3 Contractor will comply with all reasonable requests of the Owner and Construction Manager (if applicable) with respect to additional security and protections required for work interfacing with Facility Operations. Safety is of the utmost importance on this project and all issues relative to safety and protection of the Facility, Staff and Occupants will be treated as emergency needs and will not be subject to the 7 day notice requirements of Article 14.

§ 10.1.1.3.1 General Contractor to provide, maintain, relocate and remove in coordination with Construction Manager if applicable, a 6 foot high, perimeter security fence. Fence will surround the building and proposed parking areas and will have signage attached at 100' intervals advising "Construction Area – Please Keep Out". General Contractor to be responsible for opening and securing site each day.

§ 10.1.1.3.2 Orange safety fencing will be installed around the entire area of any and all earthwork, excavations, etc. and will be maintained until the work is complete.

§ 10.1.1.3.3 This is a hard hat job. Identifying hard hats shall be worn at all times.

§ 10.1.1.3.4 Hot work permits will be issued by foreman for all activities involving open flames, Construction Manager (if applicable) will provide copy of Hot Work Permit Forms.

§ 10.1.1.4 The proper execution of the required safety provisions is directly related to the general condition safety line item on the schedule of values.

§ 10.1.1.5 The Contractor shall be responsible for the immediate investigation and resolution of all safety and environmental complaints / issues generated by contractor employees, owners, owner's representatives or members of the public.

§ 10.1.1.6 Contractor shall be maintain all egress routes throughout building. Contractor shall post exit signs as coordinated with Construction Manager (if applicable). Contractor shall provide wall hung fire extinguishers throughout building as deemed necessary by Construction Manager (if applicable) and fire officials.

§ 10.1.1.7 Contractor's safety representative shall perform a daily safety inspection walk through to ensure that all requirements of the OSHA Standards, Fire Protection Standards and Safe Work Practices are being complied with

and/or corrected. The responsibility of the Contractor is to provide a safe and healthy work environment for construction personnel. Owner's personnel and representative, and the public.

§ 10.1.1.8 Upon written receipt of safety concerns and/or issues, the Contractor shall respond in writing addressing how the safety concerns or issues were resolved. The Construction Manager (if applicable) shall be copied on all safety related correspondence.

§ 10.1.1.9 Prime Contractor's response and compliance with Construction manager's Project Manager (if applicable) and correction of deficiencies noted in Construction Manager's Safety Report is mandatory. Failure to comply will be grounds for withholding of progress payments until the conditions are acceptable to Construction Manager and OSHA.

§ 10.1.1.10 The Contractor shall submit to Construction Manager (if applicable) a copy of all licenses (welding, power nailer, asbestos, etc, ) as required by applicable agencies.

§ 10.1.1.11 Contractor shall have all required personal protective equipment and materials available for and used by each employee as required by Federal, State and Local guidelines.

§ 10.1.1.12 Contractor shall supply proper equipment and crew sizes as necessary to safely complete the work.

§ 10.1.1.13 Contractor shall provide documented safety training for each of their employees and subcontractor's employees no later than the first day they arrive on site. The training shall be documented and signed by the trainer and employee. A copy of all safety-training documents is to be provided to Construction Manager (if applicable) and updated as manpower loading increases.

§ 10.1.1.14 The Contractor shall supply two (2) OSHA approved means of access / egress to each floor and roof for the course of the entire project for use by all applicable parties. The Contractor shall erect and maintain OSHA approved pedestrian walking bridges, for emergency access / egress and as necessary to protect personnel from overhead work. The number of protected entrances will be as determined by Construction Manager (if applicable).

§ 10.1.1.15 The Contractor shall be responsible for providing and maintaining all temporary emergency egress routes. The Contractor shall obtain the approval of the Building and Fire Departments for all temporary emergency egress routes. General Contractor to provide for fire separation walls between occupied areas as required by local officials.

§ 10.1.1.16 Contractor shall provide OSHA approved pedestrian walking bridges as necessary (determined by Construction Manager – if applicable) to protect against overhead hazards.

§ 10.1.1.17 Contractor shall provide, relocate and / or maintain barricades, signage, provide flagmen etc. as necessary to ensure public safety and safe egress. Contractor to provide, maintain, relocate and remove in coordination with Construction Manager, if applicable to protect against overhead hazards.

§ 10.1.1.18 Notify Construction Manager (if applicable) immediately upon arrival of OSHA to the site.

§ 10.1.1.19 Contractor shall submit to Construction Manager (if applicable), all MSDS sheets and shall cooperate in the posting of all required notifications relative to the use of hazardous substances on the property. Contractor to comply with NJ Law regarding the use or storage of hazardous substances in Buildings. MSDS sheets shall be posted prior to product being delivered to site.

§ 10.1.1.10 Contractor, subcontractor, vendor, etc should enforce a full time no smoking or alcohol use policy for all employees during the entire course of the project. Any worker found violating these reflections, or being belligerent, will be subject to removal from the site at the sole discretion of Construction Manger, if applicable.

§ 10.1.1.11 Contractor shall be responsible to secure the site at the end of each workday by an effective means and maintain until all parties determine no longer required.

§ 10.1.1.12 For the safety of occupants, staff, and the public, the steel erection must be scheduled and coordinated with the Owner and Construction Manager (if applicable). Swinging of steel and crane boom over occupied space will not be allowed. Steel contractor shall provide additional barricades and fencing around his crane and steel at all times.

§ 10.1.1.13 Contractor must submit an acceptable OSHA compliant site specific written safety plan to Construction Manger (if applicable) for review within fourteen (14) days from the notice to proceed or prior to mobilizing on site, which ever comes first. The written safety plan shall include (as applicable to their work) but is not limited to the following:

- Full time no smoking policy or alcohol use is allowed on the project. Any worker violating these restrictions, or being belligerent, will be subject to removal from the site. (Contractors shall post required signs).
- Full time hard hat policy (identifying hard hats shall be worn at all times).
- Site specific emergency action plan with contractor phone numbers, active 24 hours a day, 7 days a week.
- Competent on site safety representative, named and active (Provide alternate)
- Scaffold erection plan, including a log of daily inspections.
- Full time fall protection plan and exposures over 6'-0"
- Job site signage plan (perimeter fence warning signs posted 50'-0" o.c.
- First aid and CPR provisions
- OSHA 200 log and Job Safety and Health Protection Poster
- Daily clean up.
- Hazard Communication Program with MSDS logged and maintained.
- Hazard Communication program.
- Daily diary of work, issues, and incident, etc.
- Sheeting, shoring and excavations protection line.
- GFI safety program
- Hazardous Energy Control Lock out tag out program
- Required safety clothes; Eye and ear protection, respirators, boots, belts, gloves etc. as appropriate to their work requirement.
- Fire Extinguishers.
- Removal guard rail and protection at material loading areas, 200lb force minimum requirement.
- All stairs and platforms must have railings, 200lb force minimum requirement. Stair pans and landings must be filled prior to their use.
- Daily inspection of tools and equipment; verify safety devises are operational.
- Ladder usage plan
- Weekly tool box meetings, documented and signed by each employee.
- Temporary heat procedures.

§ 10.1.1.14 Contractor shall maintain and submit a complete copy of the written safety plan, logs, diaries, plans and programs on site for the Construction Manager (if applicable).

§ 10.1.1.15 The speed limit within the project property is 5MPH. Contractor employees operating vehicles in excess of the speed limit or in any otherwise unsafe manner will be directed to leave the site and not permitted to return.

## § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction as well as any other real or personal property of the Owner.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.2.1 Contractor shall comply with all regulations required by the Federal Occupational Safety and Health Act (OSHA).

§ 10.2.2.2 The Contractor shall conform to all applicable New Jersey Department of Environmental Protection regulations.

§ 10.2.2.3 Contractors must comply with Construction and Environmental Standards contained in Federal and State Regulations and other applicable laws.

§ 10.2.2.4 It is the Contractor's responsibility to determine the existence of potentially hazardous materials, including lead, and to protect his workmen and the work area.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief for fire marshal. The area within the site limits under the Contractor's control shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site. Contractor will comply with all reasonable requests of the Owner and Construction Manager with respect to additional security and protections required for work interfacing with Owner's Operations. Safety is of the utmost importance on this project and all issues relative to safety and protection of the staff and public will be treated as emergency needs and will not be subject to the 7-day notice requirements of Article 14.

§ 10.2.10 The Contractor shall remove snow or ice which may accumulate on the site within areas under his control which might result in damage or delay.

§ 10.2.11 The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner and Contractor, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access. Whenever unattended, including nights and weekends, mobile equipment and operable machinery shall be kept locked and made inoperable and immovable.

§ 10.2.12 Neither the Owner nor the Architect shall be responsible for providing a safe working place for the Contractor, the Subcontractors or their employees, or any individual responsible to them for the work.

§ 10.2.13 The Contractor shall conform to requirements of OSHA, the Construction Safety Code of the State Department of Labor and those of the AGC Manual. The requirements of the New Jersey and Local Building Construction Codes shall apply where there are equal to or more restrictive than the requirements of the Federal Act.

§ 10.2.14 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work as necessary from injury or any cause.

§ 10.2.15 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work which caused death, personal injury or property damage giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the Owner and Architect.

§ 10.2.16 Contractor is required to follow and enforce the work rules set forth below. Failure to comply with or enforce any of these rules will be grounds for suspension and/or termination of this contract:

§ 10.2.16.1 No use of alcoholic beverages prior to or during working hours.

§ 10.2.16.2 No use of illegal drugs or prescription medications which could induce drowsiness or otherwise impair perception or performance. Use of illegal drugs may result in prosecution to the fullest extent of the law. Any warning associated with use of prescription drugs must be complied with, particularly warning against operation of machinery and equipment.

§ 10.2.16.3 No horseplay or rough-housing will be allowed.

§ 10.2.16.4 No sexual, racial, or ethnic harassment, or similar conduct will be tolerated.

§ 10.2.16.5 All employees shall use proper sanitation habits including use of toilet facilities and garbage cans.

§ 10.2.16.6 All employees shall dress in clothing appropriate for the work they are to perform. All personnel are to wear hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.

§ 10.2.16.7 All equipment is to be properly stored and/or secured at the end of the work day or if it is to remain idle for greater than one hour.

§ 10.2.16.8 All personnel are to be made aware of the availability of Material Safety Data Sheets for materials used at the Project site. This information is available from the Contractor using the product. The Contractor shall maintain a copy of all MSDS forms at the construction site office for all personnel to review.

### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death





termination, nonrenewal, modification, or expiration of such coverage without thirty (30) days prior written notice to Owner. In the even of any failure by Contractor to comply with the provisions of this Paragraph 11.1, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Paragraph 11.1 and/or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and overages. Contractor shall provide to Owner a coy of any and all applicable insurance policies. Architect and the State of New Jersey shall be named as an additional insured on all Insurance Policies to the provided by the Contractor. The Owner shall be named as an additional primary insured on all Insurance Policies to be provided by the Contractor..

§ 11.1.2 Contractor shall require all Subcontractors to carry similar insurance coverages and limits of liability as required under this Article 11, adjusted to the nature of Subcontractors' operations and submit same to Owner for approval before any personnel or equipment is brought onto the site and/or before any work commences.

§ 11.1.3 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, the Contractor shall indemnify, defend and hold harmless the Owner, Architect, and the Sate of New Jersey from any and all claims for which the required insurance would have provide coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

*(Paragraphs deleted)*





§ 12.2.2.3 The two-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

**§ 12.3.1** This Subparagraph relates exclusively to the knowing acceptance of nonconforming work by the Owner. It has no applicability to work accepted by the Owner or Architect without the knowledge that such work fails to conform to the requirements of the Contract Documents.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense. The Contractor also agrees that the cost of testing services required for the convenience of the Contractor in his scheduling and performance of the Work and the cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### § 13.6 INTEREST

§ 13.6.1 The Contractor shall not be entitled to any payment of interest for any reason, action or inaction by the Architect or the Owner.

§ 13.6.2 Any payments withheld for time delays, faulty materials, or workmanship, shall not bear interest for period of delay or non-acceptance.

### § 13.7 TIME LIMITS ON CLAIMS

Owner and Contractor issues including the applicable statute of limitations shall be as governed by New Jersey Law.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract in the manner provided in Subparagraph 14.1.2 if repeated suspensions, delays or interruptions by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100% of the total number of days scheduled for completion or 120 days in any 365 day period, whichever is less, or if all the Work is entirely stopped for a continuous period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities





question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 5 days after occurrence of the event giving rise to such Claim or within 5 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make Claim for an increase in the Contract Sum written notice as provided herein shall be given to the Owner, Architect and Construction Manager (if applicable) before proceeding to execute the Work and within five (5) days after the occurrence of the event giving rise to such Claim for increase in the Contract Sum. The foregoing written notice shall contain a written statement from the Contractor setting forth in detail the nature and cause of the Claim and an itemized statement of the increase requested. No such written notice shall form the basis of an increase to the Contract Sum unless and until such increase has been authorized by a written Change Order executed and issued according to the terms and conditions set forth herein. The Contractor hereby acknowledges that the Contractor shall not have any right to and the Owner will not consider any requests for an increase in the Contract Sum that is not submitted in compliance with the foregoing requirements. Prior notice is required for Claims relating to an emergency endangering life or property arising under Section 10.6.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner and Architect. No such claim shall be valid unless so made. The Contractor's Claim shall include an estimate of cost and probably effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary. Any change in the Contract Sum resulting from such Claim shall be authorized only by Change Order or Construction Change Directive, as the case may be. All required notices for additional costs shall be made by Certified Mail.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Owner may claim consequential damages arising out of or relating to this Contract. This includes  
.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons;

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.



§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through litigation mediation, to binding dispute resolution.

§ 15.2.5.1 Any dispute arising under the Contract shall be resolved in accordance with and subject to the limitations contained in N.J.S.A. 40A:11-41.1 as follows:

§ 15.2.5.1.1 All remedies provided elsewhere in the Contract Documents to resolve disputes, claims and protests shall be exhausted. Where the Engineer or Architect is required to issue a decision, such decision shall be a condition precedent to proceeding to resolve the dispute in accordance with Paragraph 2.

§ 15.2.5.1.2 Prior to litigation, the Owner and Contractor shall endeavor to settle disputes by mediation in accordance with the current Construction Industry Mediation Rules of the American Arbitration Association. Demand for mediation shall be filed in writing by the party requesting mediation with the other party to this Agreement and with the American Arbitration Association. The Engineer or Architect shall be provided with an information copy of the demand unless the Engineer or Architect is joined. In no event shall such demand be made more than 30 days after completion, acceptance and final payment nor after the date when institution of legal or equitable proceeding regarding the matter in dispute would be barred as a matter of law.

§ 15.2.5.1.3 Nothing herein shall be construed to prevent the Owner and Contractor from agreeing to utilize any other alternative dispute resolution procedure in lieu of or in addition to mediation.

§ 15.2.5.1.4 Nothing herein shall be construed to prevent the Owner from notifying any performance guarantor (Surety) of, and requesting the Surety's assistance in resolving any disputes which involve the Contractor's performance.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the

demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to non-binding dispute resolution.

§ 15.3.2 The mediation shall be pursuant to industry standards prior to being submitted to a court for adjudication.

*(Paragraph deleted)*

§ 15.4 NON-BINDING ARBITRATION

§ 15.4.1 If agreed to by Owner, non-binding arbitration shall be pursuant to industry standards prior to being submitted to a court for adjudication.

*(Paragraphs deleted)*

## PREVAILING WAGE RATES

## **PREVAILING WAGE RATES**

1. To obtain current prevailing wage rates, visit the following website:  
[http://lwd.dol.state.nj.us/labor/wagehour/wagerate/prevailing\\_wage\\_determinations.html](http://lwd.dol.state.nj.us/labor/wagehour/wagerate/prevailing_wage_determinations.html)

**END OF SECTION**

## GEOTECHNICAL ENGINEERING REPORT



***Geotechnical Engineering Report  
Proposed Burn Building***

**Prepared For:**

Mr. Adam Weschler, Project Manager  
Bach Associates, PC  
304 White Horse Pike  
Haddon Heights, New Jersey 08035

**Location:**

Camden County Fire Academy  
Block 12302 / Lot 1.05  
424 Woodbury-Turnersville Road  
Blackwood, Camden County, New Jersey 08012

**Prepared By:**

**Digneo Engineering, LLC**  
New Jersey Certificate of Authorization # 24GA28274000  
297 Westwood Drive, Suite 101  
West Deptford, New Jersey 08096  
DE Job Number: 54-103  
Date: February 23, 2024

*Frank A. DeFeo*

*Frank DeFeo*  
*Senior Project Manager, Geotechnical Services*

*Robert L. Jost*

*Robert L. Jost, PE*  
*New Jersey Professional Engineer, License No. 51609*  
*Director of Geotechnical Services*



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## ATTACHMENTS

- A KEY MAP PLAN
- B TEST BORING LOCATION PLAN
- C TEST BORING LOGS
- D LABORATORY TEST RESULTS



## 1. INTRODUCTION

---

This report was prepared by Digneo Engineering LLC (DE), on behalf of Bach Associates, PC, and contains the results of a subsurface geotechnical investigation conducted at the location of a proposed Fire Training Building. The purpose of this investigation was to assess the suitability of the existing subsurface soil conditions to support the proposed structure. Our scope of work included a subsurface exploration, a laboratory testing program, and geotechnical engineering analyses. This report summarizes the work completed and provides foundation recommendations along with our general construction recommendations.

## 2. SITE & PROJECT DESCRIPTION

---

### 2.1 EXISTING CONDITIONS

The project site is located at Block 12302 and Lot 1.05, locally known as 424 Woodbury Turnersville Road, in Blackwood, Camden County, New Jersey (see Attachment A – *Key Map Plan*). The project site is bordered to the east by Woodbury-Turnersville Road, to the south by Collier Drive, and to the north and west by wooded land. The property is comprised of Camden County owned buildings, facilities, and site improvements.

Topography at the subject area is slopes gently upwards from northeast to southwest from approximately Elevation 58 feet to Elevation 59 feet. Vertical elevations are referenced to the North American Vertical Datum of 1988 (NAVD88). Existing topographical information was provided by Bach Associates, PC in an existing condition drawing entitled “Site Plan” dated January 22, 2008.

### 2.2 PROJECT DESCRIPTION

The project is expected to entail the construction of a new three-story burn building for use by the Camden County Fire Academy. The burn building will encompass approximately 5,000 square feet (SF) in plan area and is located within the western portion of the existing Camden County Fire Academy Complex. The proposed building is planned to be structural steel framing with sheet metal sheathing and/or other fire-retardant materials constructed upon a concrete slab on ground.

The client anticipates that the maximum gravity loads are anticipated to be less than 40 kips, and the maximum lateral load is anticipated to be less than 5 kips based on their experience with similar structures. Should the actual loads be different than those shown above, DE should be contacted so that we can review and revise our conclusions and recommendations, if necessary.

No information regarding finished grades or finish floor elevations were available at the time of this report. Based on the existing site topography, it is anticipated that cuts and fills less than approximately 2 feet will be required. Should cuts and/or fills be greater, DE should be notified so that our final recommendations can be reviewed and revised if necessary.





### 3. GEOLOGY

Based on the Surficial Geologic Map of New Jersey, the site is underlain by the soils of the Weathered Coastal Plain Formations (Geologic Symbol: Qwcp). The Weathered Coastal Plain Formations lithology generally consists of exposed Sand and Clay of Coastal Plain bedrock. The formation also includes a thin patchy alluvium and colluvium and pebbles left from erosion of surficial deposits. The soils encountered during this investigation are considered representative of this formation.

### 4. LABORATORY TESTING

Soil samples obtained during the test boring operation were reviewed and visually classified. To further define the physical characteristics of the encountered soils, one representative soil sample was subjected to laboratory analysis. The analyses conducted on this sample consisted of the following:

- Natural Moisture Content Testing (ASTM D2216)
- Sieve Analysis (ASTM D6913)
- Atterberg Limits Determination (ASTM D4318)

The results of this testing are presented below and the laboratory test reports are enclosed as Attachment D.

Laboratory Test Results											
Location	Depth (ft)	Layer ID	% Gravel	% Sand	% Fines	LL	PL	PI	% Natural Moisture Content	USCS Group Symbol	USCS Group Name
B-2	2 – 4	Stratum I	0.0	53.0	47.0	NP	NP	NP	9.2	SM	Silty SAND

LL = Liquid Limit, PL = Plastic Limit, PI = Plasticity Index, NP = Non-Plastic

### 5. SUBSURFACE INVESTIGATION

A subsurface geotechnical investigation was performed to evaluate the subsurface conditions at the project site. Two test borings, referenced as B-1 and B-2, were completed within the footprint of the proposed burn building and are shown on the *Test Boring Location Plan* presented in Attachment B. Each boring was conducted to a depth of approximately 40 feet below existing ground surface. The test borings were located in the field by DE personnel based on information provided by the client.

The borings were conducted utilizing a truck-mounted drill rig equipped with hollow stem augers and split spoon samplers. The split spoon samples were conducted in accordance with ASTM D1586, were recovered at appropriate intervals throughout the test borings, and Standard Penetration Test (SPT) values were recorded for each soil sample. SPT values are the number of blows required to drive a 2 inch outer-diameter, split barrel sampler 24 inches using a 140-pound weight dropped 30



inches. The number of blows required to advance the sampler over the 12-inch interval from 6 inches to 18 inches is considered the "N" value.

Oversight of the test boring operation was provided by a representative of DE.

Descriptions of the encountered subsurface conditions are provided in the following sections of this report. Additional details regarding the encountered soils, obtained soil samples, and other subsurface information obtained in the test boring program are located in the *Test Boring Logs*, presented as Attachment C.

## **5.1 ASPHALT/SUBBASE**

Bituminous asphalt pavement (asphalt) was encountered at the ground surface at each test boring. The surficial asphalt was found to be approximately 1 inch to 2 inches in thickness with an underlying sand and gravel mixed subbase approximately 5 inches to 6 inches in thickness. Variations in the thickness and type of surficial and subbase materials should be expected within the unexplored portions of the site.

## **5.2 STRATUM I**

Stratum I was encountered below the asphalt section at each test boring location and extended to a depth of approximately 23 feet to 25 feet below existing ground surface. Stratum I consisted primarily of a yellowish brown to orangish brown fine to medium SAND with varying amounts of Silt and Clay. The documented N values indicated this layer was in a medium dense state of relative density to about 4 feet below ground surface, then decreasing to very loose with depth.

Laboratory testing conducted on a representative sample of Stratum I indicated this soil was non-plastic, with a natural moisture content of 9.2 percent. This soil was classified using the Unified Soil Classification System (USCS) as a Silty SAND with Gravel (SM).

## **5.3 STRATUM II**

Stratum II was encountered below Stratum I and extended to at least the boring termination depth of approximately 40 feet below existing ground surface. Stratum II consisted primarily of brownish gray to dark greenish gray fine to medium SAND, SILT and CLAY mixture. The documented N values indicated this layer was in a very loose state of relative density but improving to medium dense with depth.

## **5.4 GROUNDWATER**

Groundwater was encountered at a depth of approximately 11 feet below existing ground surface in both test borings performed at the site. This depth corresponded to a groundwater elevation of approximately EL. 48 feet. These observations were made at the time of the test boring operation, and groundwater elevations will vary with daily, seasonal, and climatological conditions.



## 6. GEOTECHNICAL CONCLUSIONS & RECOMMENDATIONS

---

The geotechnical investigation has revealed the general subsurface profile underlying the proposed development scheme footprint is comprised of the naturally occurring soils of Stratum I and Stratum II. Provided the recommendations detailed in this report are followed, the firm and stable naturally occurring soils, or newly placed structural fill placed as described in this report, are suitable for support of the proposed structure on a conventional shallow foundation system.

Details regarding our geotechnical conclusions and recommendations are provided in the following sections.

### 6.1 FOUNDATIONS

Foundation recommendations for this project are provided below.

- Shallow strip and/or spread foundations are suitable for support of the proposed burn building.
- The foundations shall be supported on the firm and stable soils of Stratum I, or structural fill placed in accordance with the recommendations in this report.
- Exposed foundation subgrades shall be compacted prior to any concrete placement. Compaction shall be carried out using applicable compaction equipment able to safely operate in the foundation excavations. Compaction of the foundation subgrades is necessary to evenly distribute foundation loads and identify any weak or unstable areas.
- The foundations for the proposed building shall be designed for a **maximum allowable bearing pressure of 3,000 pounds per square foot (psf)**, based on column and wall foundations being a minimum of 3 feet and 1.5 feet in width, respectively.
- Foundations shall rest on soils no less than 3 feet below final exterior grade to protect against frost heave.
- Any unstable areas within any foundation subgrade areas that cannot be improved in place shall be removed to firm and stable Stratum I soils and replaced with clean  $\frac{3}{4}$  inch stone (compacted), concrete, or cementitious flowable fill.
- Please note “stay forms” or similar techniques may be required to maintain vertical excavations within any loose and/or moist granular soils.
- In addition, we recommend that the shallow foundations bear below a zone bounded by a plane that extends outward and upward on a 1:1 slope from any proposed or existing underground utility excavation or other underground features.
- Foundation subgrades shall be promptly cleared of loose material or debris prior to the placement of concrete.
- We recommend that no footings be excavated that cannot be poured on the same day.



The foundation subgrades shall be reviewed by a Geotechnical Engineer licensed in the State of New Jersey during construction to confirm the suitability of the subgrade soils.

## 6.2 SETTLEMENT

For the purposes of our settlement analyses, a maximum column load of approximately 40 kips was considered. Based on this loading, recommended bearing pressures, and our geotechnical analyses, maximum post-construction settlement was expected to be less than 1 inch with differential settlements less than approximately 0.5 inches.

Should the foundation loads exceed those described above, DE shall be contacted so that we may review our analyses and revise our conclusions, if required.

## 6.3 LATERAL EARTH PRESSURES

The following data was provided based on the use of on-site soils placed under engineering control for backfill.

### **Stratum I**

Soil Unit Weight  $\gamma = 105$  pcf

Cohesion  $C = 0$  psf

Angle of Internal Friction  $\phi = 30$  degrees

Coefficient of Active Pressure  $K_a = 0.33$

Coefficient of Passive Pressure  $K_p = 3.00$

Coefficient of At-Rest Pressure  $K_o = 0.50$

Should different soil be used, design data shall be re-evaluated and revised, if required, based on the specific material.

## 6.4 FLOOR SLAB

The floor slab for the proposed burn building may be constructed as a conventional slab on ground and supported on the firm and stable soils of Stratum I or structural fill placed in accordance with the recommendations set forth in this report. Provided the soils supporting the slab are compacted to at least 95 percent of their maximum dry density and within  $\pm 2$  percent of the optimum moisture content, both as determined by ASTM D1557, the soils are expected to exhibit a modulus of subgrade reaction of approximately 150 pounds per cubic inch (pci).

The slab shall be supported on a layer of free-draining crushed stone or washed gravel subbase, a minimum of 4 inches in thickness, and compacted to non-movement prior to placement of the slab concrete. The porous sub slab layer provides a capillary break between the slab and the underlying subgrade soils.

## 6.5 SEISMIC SITE CLASSIFICATION

Based on the subsurface conditions encountered during our investigation at the site, and the guidance provided by the 2021 International Building Code, New Jersey edition, the subsurface soils can be classified as Seismic Site Class D.



## 7. CONSTRUCTION PHASE RECOMMENDATIONS

---

Based on our geotechnical engineering analyses for this project and our experience with similar projects, the following construction phase recommendations are offered in the following sections.

### 7.1 SITE PREPARATION

All surficial materials shall be removed from the structural areas at the beginning of the project. Structural areas are defined as areas covered by proposed structure and extending a minimum of five feet beyond the proposed structure. Unstable or deleterious materials shall be removed from within these areas as detailed in this report.

### 7.2 COMPACTION AND PROOFROLLING

Structural areas shall be compacted using a steel-drum vibratory roller having a minimum static weight of **at least 10 tons** prior to the placement of any structural fill. This shall be done following the removal of surficial materials and any excavation needed to reach proposed subgrade elevations. A minimum of 2 overlapping passes, **in both directions**, of the compaction equipment shall be completed across all structural areas. **Compaction of the virgin subgrade soils and proofrolling is considered a critical part of site development for this project and shall be completed under the observation of the Geotechnical Engineer of Record.**

Following the compaction procedures described above, proofrolling of the structural areas shall be performed using a fully loaded tri-axle dump truck. Weak or yielding areas discovered during the compaction and proofrolling procedures described above shall be compacted in-place to non-movement or removed to firm and stable subbase soils and replaced with structural fill placed in accordance with this report.

The compaction and proofrolling procedures described above are necessary to verify the stability of the upper zones of the structural areas and for uniform distribution of loads. In areas where removal of soils (cut) is necessary, proofrolling can be postponed until after the proposed subgrade elevation is achieved.

### 7.3 EXCAVATION CONSIDERATIONS

Construction excavations for this project are expected to take place within the soils of Stratum I. Based on our findings, these soils are expected to be removed using conventional excavation equipment and techniques.

All excavations shall be adequately sloped, benched, or otherwise supported to minimize collapse and protect personnel. In addition, all excavations shall be completed in accordance with all pertinent Occupational Safety and Health Administration (OSHA) guidelines and requirements.



## 7.4 STRUCTURAL FILL

Recommendations regarding imported structural fill and the use of on-site soils as structural fill are provided in the following sections.

### **Imported Fill**

Any imported Structural Fill needed to raise site grades or replace weak and yielding soils shall be free of ash, trash, cinders, organic matter, or any other deleterious materials. This Fill shall have a Plasticity Index (PI) less than 10; Liquid Limit (LL) less than 30; and less than 15 percent by weight rock fragments larger than 2 inches with no particle size exceeding 4 inches. Further, the Fill shall be well-graded with less than 15 percent by weight larger than the  $\frac{3}{4}$  inches and less than 12 percent smaller than the No. 200 sieve.

The Geotechnical Engineer of Record shall evaluate any imported soils proposed for use as structural fill that differ from above, prior to their placement at the site.

### **On-Site Soils Reuse**

Comments regarding the suitability of the on-site soils for reuse as structural fill are provided below.

**Stratum I** – These soils consisted primarily of yellowish brown to orangish brown fine to medium SAND with varying amounts of Silt and Clay. These soils are considered marginally suitable for use as structural fill. Due to the high silt and clay content, the Stratum I soils are moisture sensitive, and will be difficult to work with during wet periods. These soils may require conditioning (i.e. drying) prior to reuse.

**Stratum II** – These soils are not expected to be available during construction.

Our analysis of the suitability of the on-site soil for use as structural fill was based on data collected from the test boring location completed at the site. Soil suitability shall be confirmed in the field by a qualified Geotechnical Engineer during construction.

## 7.5 BACKFILLING REQUIREMENTS

The following structural fill lift thicknesses can be used with the following compaction equipment:

- Loose lifts not exceeding 10 inches: Where Heavy Compaction Equipment can be utilized.
- Loose lifts not exceeding 6 inches: Where only hand operated tampers or walk-behind roller can be utilized.

Within structural areas, all structural fill shall be compacted to at least 95 percent of the maximum dry density and within  $\pm 2$  percent of the optimum moisture content, both as determined by ASTM D1557.

Within non-structural areas, all structural fill shall be compacted to at least 90 percent of the maximum dry density, and within  $\pm 2$  percent of the optimum moisture content, both as determined by ASTM D1557.



The lift thicknesses, number of passes, and the type of the compaction equipment needed to achieve the compaction percentages noted above can be adjusted in the field during backfilling and compaction procedures.

## **7.6 FOUNDATION CONSTRUCTION**

The following shall be adhered to during foundation construction at the site:

- Foundation subgrades shall be compacted using a walk-behind roller, hand-operated tamper, or similar excavation-appropriate compaction equipment to provide a firm and stable subbase suitable for proper support of the proposed foundations.
- Should the foundation subgrade soils be disturbed, and cannot be improved in place, they shall be removed to firm and stable subbase soils. The resulting over-excavation can be backfilled with concrete, flowable cementitious fill or structural fill placed in accordance with this report.
- Water shall be prevented from entering the foundation excavations. Any water that does enter the foundation excavation shall be removed within 24 hours and the subgrade soils re-evaluated for stability.
- It is strongly recommended foundation excavation and concrete placement take place on the same day.
- Attention is directed to Section 6.1 of this Report. All recommendations therein shall be adhered to.

The foundation subgrades shall be reviewed by a Geotechnical Engineer licensed in the State of New Jersey during construction to confirm the suitability of the subgrade soils.

## **7.7 SLAB CONSTRUCTION**

Prior to the placement of any granular subbase and placement of the concrete slab on ground, proofrolling and compaction of the proposed concrete slab area shall be carried out in accordance with this report.

Dependent upon the weather conditions, and construction schedules, the slab subgrade may contain weak, yielding and/or overly saturated soil immediately prior to slab construction. These soils may be removed and replaced in accordance with this report, or alternate methods, such as aerating and re-compacting, may be utilized to stabilize the slab subgrade. The most appropriate method used for stabilization of the slab subgrade shall be determined in the field based on site-specific field and soil conditions, as well as the availability and cost effectiveness of various methods. The Geotechnical Engineer shall be consulted should these needs arise.

## **7.8 DEWATERING**

Groundwater was encountered within both borings at a depth of approximately 11 feet below existing ground surface. This depth corresponded to a groundwater elevation of approximately EL. 48 feet. As such, significant dewatering efforts are not anticipated for this project unless foundation and utility excavations extend beyond EL. 49 feet.



However, the potential exists for temporary, localized perched water to be encountered within foundation and utility excavations, especially after precipitation events. It is anticipated any encountered perched water shall be able to be controlled using localized drainage ditches and submersible pumps.

These observations were made at the time of the test boring operation, and groundwater table elevations will vary with daily, seasonal, construction activity, climatological conditions, and other factors.

## **8. CONSTRUCTION PHASE OBSERVATIONS AND TESTING**

---

As Geotechnical Engineer of Record for this project, DE recommends we be retained to provide the construction phase observations and materials testing during construction. This shall be done to verify the geotechnical recommendations detailed in this report are adhered to during construction at the site.

If an outside firm is retained to provide these services, we recommend this firm prepare a letter stating they will assume the responsibilities of Geotechnical Engineer of Record for the project. Further, we recommend this firm provide a letter stating their receipt of this report and acknowledgement of the recommendations provided therein, or detailing revisions to the recommendations within our report.

## **9. LIMITATIONS**

---

This report was prepared in accordance with generally accepted geotechnical practices for projects such as this one. The conclusions and recommendations contained in this report were based upon the obtained subsurface data performed at the site. Soil conditions may vary from location to location and from point to point across the project site.

The validity of the conclusions and recommendations contained in this report were limited by the scope of the field investigation and by the number of test borings that were made. The number of test locations were consistent with good engineering practice. However, given the nature of subsurface conditions, there was a possibility actual encountered conditions may differ significantly from those described in this report. Should encountered conditions differ from those described in this report, DE shall be notified immediately so that our conclusions and recommendations can be reviewed and revised, if required.

The scope of this investigation was limited to the geotechnical analysis of the load-carrying capabilities and stability of the soils underlying the project area. Oil, hazardous waste, radioactivity, irritants, pollutants, radon or other dangerous substances and conditions were not the subject of this study. Their presence and/or absence are not implied, inferred, or suggested by this report or results of this study.



# Attachment A

## Key Map Plan

PROJECT NORTH



Gloucester Twp  
Youth Football

Midget Football  
Sports Complex

Elmwood Hills  
Healthcare Center

Marge Martin  
Sports Complex

621

ek  
ks

Camden County  
Regional Emergency...



SITE  
LOCATION

Lakeland Aircraft  
Modelers  
Temporarily closed

Collier Dr

Collier Dr

US Army Res

**PROJECT:**

**GEOTECHNICAL INVESTIGATION  
CAMDEN COUNTY FIRE ACADEMY BURN BUILDING  
BLOCK 12302, LOT 1.05  
424 WOODBURY-TURNERSVILLE ROAD  
BLACKWOOD, CAMDEN COUNTY, NJ 08102  
DE PROJECT NO. 54-103**

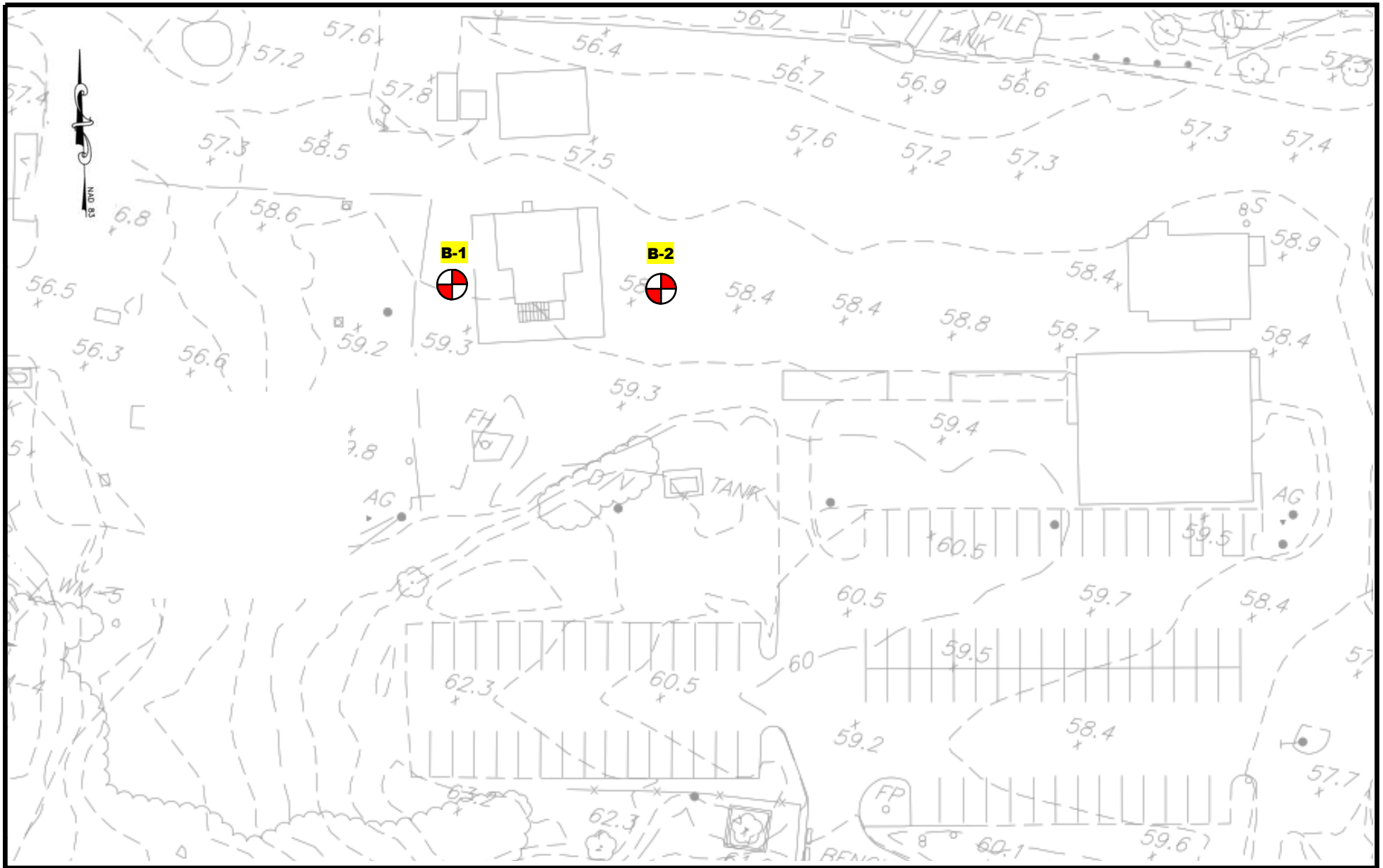
**DRAWING TITLE: DRAWING SHEET:**

**KEY MAP  
PLAN**

**ATTACHMENT 'A'**



Attachment B  
Test Boring Location Plan



**PROJECT:**

**GEOTECHNICAL INVESTIGATION  
 CAMDEN COUNTY FIRE ACADEMY BURN BUILDING  
 BLOCK 12302, LOT 1.05  
 424 WOODBURY-TURNERSVILLE ROAD  
 BLACKWOOD, CAMDEN COUNTY, NJ 08102  
 DE PROJECT NO. 54-103**

**DRAWING TITLE: DRAWING SHEET:**

**TEST BORING  
 LOCATION PLAN**

**ATTACHMENT 'B'**



**APPROXIMATE TEST BORING LOCATION**



# Attachment C

## Test Boring Logs



### TEST BORING LOG

<b>Project:</b> <u>Camden County Fire Academy Burn Building</u>	<b>Boring Number:</b> <u>B-1</u>
<b>Date Drilled:</b> <u>1/23/2024</u>	<b>GS Elevation (ft):</b> <u>59</u>
<b>Driller / DE Rep:</b> <u>SBI / Frank D. &amp; Matt K.</u>	<b>GW Elevation (ft):</b> <u>48</u>
<b>Rig Type:</b> <u>Mobile Truck B29</u>	<b>Drilling Method:</b> <u>3.25" ID HSA</u>
<b>Project Number:</b> <u>54-103</u>	<b>Topo Est:</b> <u>X</u> <b>Field Survey</b> <u>      </u>

Depth (ft)	Sample #	Sample Depth	Blows/6"			N	Soil Description	Remarks
			7	8	7			
1	S-1	0' - 2'	7	8	7	15	<b>ASPHALT 1" Subbase 6"</b>	<b>Stratum I</b>  <span style="color: blue;">H<sub>2</sub>O Depth : 11'</span>
2							Medium dense yellowish brown fine SAND, some Silt, moist	
3	S-2	2' - 4'	6	5	6	11	Medium dense yellowish brown fine SAND, little Silt, moist	
4								
5	S-3	4' - 6'	6	5	5	10	Loose yellowish brown fine SAND, little Silt, most	
6								
7	S-4	6' - 8'	3	2	3	5	Loose orangish brown fine SAND, some Silt, moist	
8								
9	S-5	8' - 10'	1	2	2	4	Very loose orangish brown fine SAND, some Silt, moist	
10								
11	S-6	10' - 12'	2	1	1	2	Very loose orangish brown fine SAND and SILT, moist to wet	
12								
13								
14	S-7	13' - 15'	2	3	3	6	Loose greenish brown to black fine to medium SAND, some Silty Clay, wet	
15								
16								
17								
18								
19	S-8	18' - 20'	WOR			0	No Recovery	
20								
21	S-9	20' - 22'	WOH			0	No Recovery	
22								
23								
24	S-10	23' - 25'	WOH			0	Very loose dark greenish gray fine to medium SAND and SILTY CLAY, wet	
25								



### TEST BORING LOG

<b>Project:</b> <u>Camden County Fire Academy Burn Building</u>	<b>Boring Number:</b> <u>B-1</u>
<b>Date Drilled:</b> <u>1/23/2024</u>	<b>GS Elevation (ft):</b> <u>59</u>
<b>Driller / DE Rep:</b> <u>SBI / Frank D. &amp; Matt K.</u>	<b>GW Elevation (ft):</b> <u>48</u>
<b>Rig Type:</b> <u>Mobile Truck B29</u>	<b>Drilling Method:</b> <u>3.25" ID HSA</u>
<b>Project Number:</b> <u>54-103</u>	<b>Topo Est:</b> <u>X</u> <b>Field Survey</b> _____

Depth (ft)	Sample #	Sample Depth	Blows/6"				N	Soil Description	Remarks
26								<b>Stratum II</b>  Loose dark greenish gray fine to medium SAND and SILTY CLAY, wet  Medium dense dark greenish gray fine to medium SAND and SILTY CLAY, moist  Medium dense dark greenish gray fine to medium SAND and SILTY CLAY, moist	
27									
28									
29	S-11	28' - 30'	2	3	4	4	<b>7</b>		
30									
31									
32									
33									
34	S-12	33' - 35'	3	5	10	11	<b>15</b>		
35									
36									
37									
38									
39	S-13	38' - 40'	7	13	12	15	<b>25</b>		
40									
41								<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> O <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> t o <input type="checkbox"/> <input type="checkbox"/> mm <input type="checkbox"/> <input type="checkbox"/> OR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> t o <input type="checkbox"/> Rod	
42									
43									
44									
45									
46									
47									
48									
49									
50									
END OF BORING AT 40 FEET									







### TEST BORING LOG

<b>Project:</b> <u>Camden County Fire Academy Burn Building</u>	<b>Boring Number:</b> <u>B-2</u>
<b>Date Drilled:</b> <u>1/23/2024</u>	<b>GS Elevation (ft):</b> <u>59</u>
<b>Driller / DE Rep:</b> <u>SBI / Matt K.</u>	<b>GW Elevation (ft):</b> <u>48</u>
<b>Rig Type:</b> <u>Mobile Truck B29</u>	<b>Drilling Method:</b> <u>3.25" ID HSA</u>
<b>Project Number:</b> <u>54-103</u>	<b>Topo Est:</b> <u>X</u> <b>Field Survey</b> _____

Depth (ft)	Sample #	Sample Depth	Blows/6"				N	Soil Description	Remarks
26								Loose dark greenish gray fine to medium SAND and SILTY CLAY, wet	Stratum II
27									
28									
29	S-10	28' - 30'	2	4	6	9	10		
30									
31									
32									
33									
34	S-11	33' - 35'	7	11	14	21	25		
35									
36									
37									
38									
39	S-12	38' - 40'	7	13	14	16	27		
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
<b>END OF BORING AT 40 FEET</b>									

Attachment D  
Laboratory Test Results



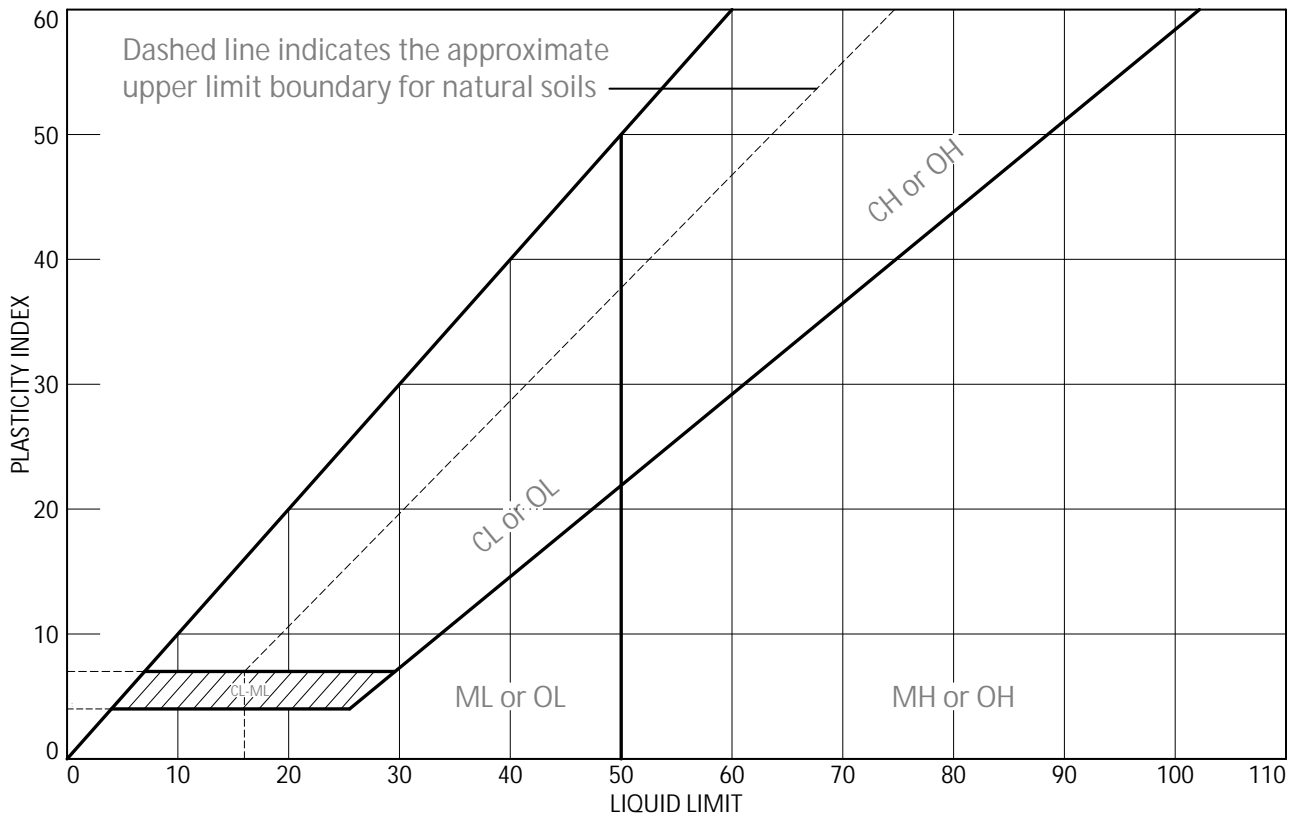
## SUMMARY OF LABORATORY TEST DATA

Project Name: Camden County Fire Academy  
DE# 54-103  
 Client Name: Digneo Engineering  
 TRC Project #: 560409.0031

SAMPLE IDENTIFICATION			Soil Group (USCS System)	Moisture Content (%)	GRAIN SIZE DISTRIBUTION USCS GRADATION				PLASTICITY			
Source #	Sample #	Depth (ft)			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index (%)
B-2	S-2	2.0-4.0	SM	9.2	0.0	53.0	47.0	NP	NP	NP	-	

NP = NON-PLASTIC

# Atterberg Limits and Moisture Content Report



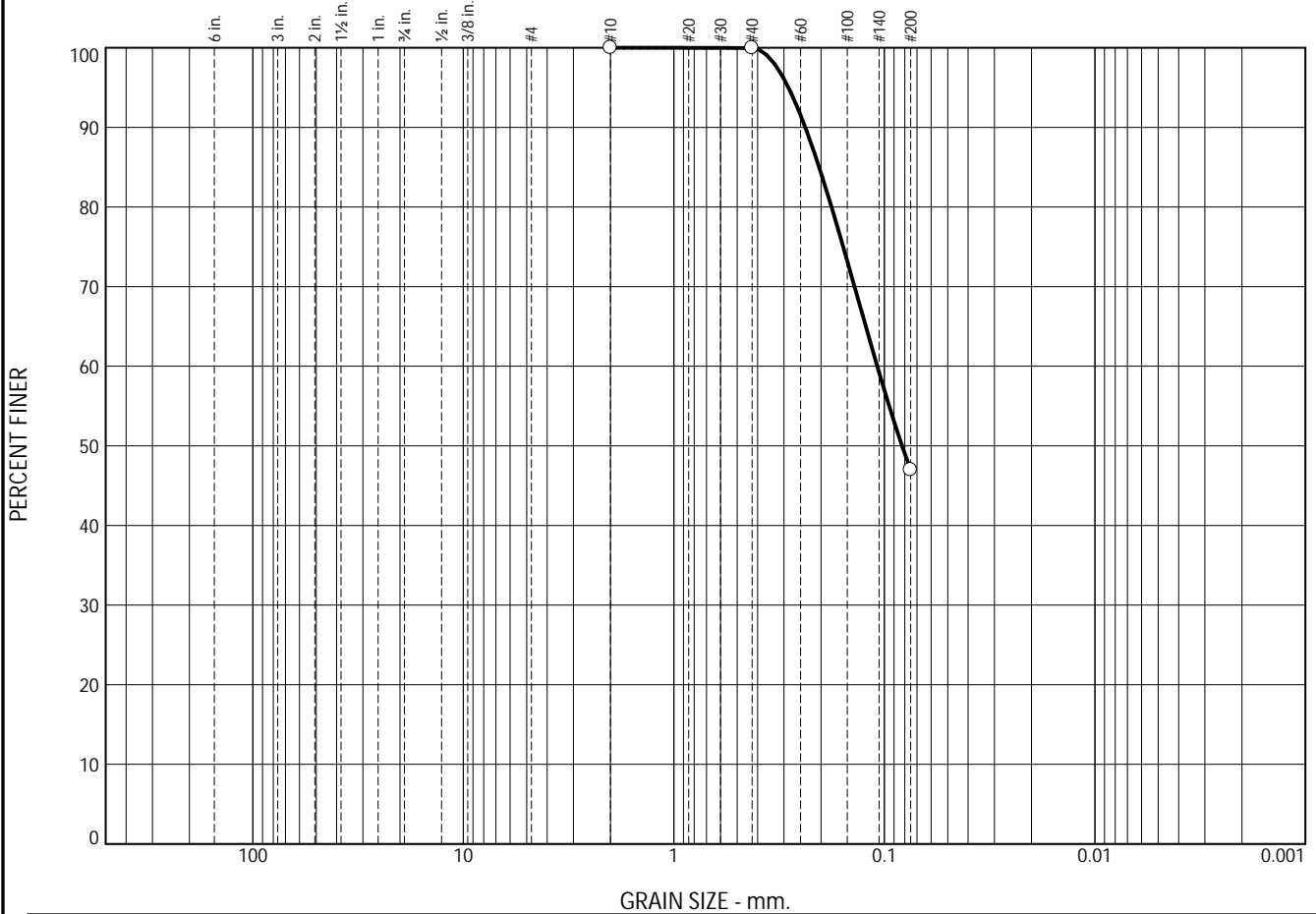
## SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	B-2	S-2	2.0-4.0 FT	9.2	NP	NP	NP		SM

TRC  
Engineers, Inc.  
Mt. Laurel, NJ

Client: DIGNEO ENGINEERING  
Project: CAMDEN COUNTY FIRE ACADEMY  
DE #54-103  
Project No.: 560409.0031

# Particle Size Distribution Report



		% Gravel		% Sand			% Fines			
% +3"		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
<input type="radio"/>	0.0	0.0	0.0	0.0	0.0	53.0	47.0			
<input checked="" type="checkbox"/>	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>	NP	NP	0.2041	0.1081	0.0824					

MATERIAL DESCRIPTION	TEST DATE	USCS	NM
<input type="radio"/> LIGHT BROWN TO LIGHT ORANGE-BROWN SILTY SAND	01/31/24	SM	9.2

Project No. 560409.0031 Client: DIGNEO ENGINEERING Project: CAMDEN COUNTY FIRE ACADEMY DE #54-103 <input type="radio"/> Source of Sample: B-2      Depth: 2.0-4.0 FT      Sample Number: S-2	Remarks: <input type="radio"/> SAMPLE DESCRIPTION BASED ON USCS
TRC Engineers, Inc. Mt. Laurel, NJ	

## **AGREEMENT FORM**

1. Camden County College Contract and Bond Form: Contractor to refer to the Camden County College's standard form of agreement.

**END OF SECTION**

## DEFINITIONS

For the purposes of these specifications, and the accompanying drawings, the following definitions shall apply. This listing of definitions is not intended to be all-inclusive, but rather a clarification of several terms which are commonly used within these documents to describe the contractor's responsibilities under this contract. All other terms shall be defined by the current edition of Webster's unabridged dictionary, and, where appropriate, the best standards of the construction industry.

- 1.1 ALLOWANCE - Final scope for a certain item will be made in the future by the Owner. The Contractor is to include a specified amount of funds in the base contract to cover each identified task in the base bid. Expenditure of Allowance funds shall be substantiated by paid invoices or other means prior to being approved for payment. Unspent Allowance funds shall be credited back to the Owner.
- 1.2 BID ALTERNATE - A specifically stated portion of the work which is to be bid separately from the base bid, and which the owner may, at their sole discretion, decide to accept or reject in order to meet budgetary requirements. A *bid alternate* will be an "Add Alternate" describing work which would result in a more costly project.
- 1.3 BUILDER'S OPTION - Where an alternative material/method may be identified as equally satisfactory, a *builder's option* may be stated, which allows the contractor to choose among the stated alternatives in order to achieve the best price for the work. The Contractor shall identify which method will be utilized, and remain consistent throughout the project. No change orders shall be awarded if a contractor elects to use the more costly material/method available from the stated *builder's option(s)*.
- 1.4 UNIT PRICE - Due to the undefined nature of certain aspects of the work (especially so in renovation projects where it is likely that concealed conditions will exist which will have an impact on the scope of repair work), the Owner may request *Unit prices* in order to predetermine the costs associated with specific products or activities of the Contractor. *Unit prices* will be established for selected items and/or specific improvements and will be referred to as the basis of approval for any change orders requested, where applicable. A list of *unit prices* will be provided to each subcontractor by the Owner, as applicable for their trade(s), and the costs will be negotiated prior to commencement of the work.

END OF SECTION

## GENERAL CONDITIONS

1. General Conditions: AIA A201, General Conditions of the Contract for Construction. Refer to Appendix A201 as amended and as included as an appendix to these specifications.

END OF SECTION



## SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. General Notes.
2. Work covered by Contract Documents.
3. Contractor use of premises.
4. Occupancy requirements.

#### 1.2 GENERAL NOTES

Project Name: Camden County College Smoke Tower Structure  
Project Address: 420 N. Woodbury-Turnersville Road, Blackwood, New Jersey 08012  
Camden County, New Jersey  
Project Number: CCC2023-1

The Bidder is to excavate a minimum of 24 inches and backfill with minimum 12 inches of I-13 select backfill before proceeding with the installation of all site improvements. The Bidder is then to install new 47'-7" x 30'-0" reinforced concrete slab, concrete footings and piers which will support new pre-engineered smoke tower structure. Adjacent to and around the building slab will be a 10'-0" wide concrete sidewalk consisting of 6" thick dense graded aggregate base course and 6" thick Class B concrete. Adjacent to and around the sidewalk will be a 10'-0" wide full depth asphalt pavement consisting of 6" thick dense graded aggregate base course, 4" thick hot mix asphalt 19M64 base course, and 2" thick hot mix asphalt 9.5M64 surface course. New pre-engineered smoke tower structure material package to be purchased by the Bidder and will be erected on site by the Bidder. Bidder to install new service line from existing utility pole. Bidder to install electrical panel in the control room and disconnect switch on the exterior of the building.

- A. This project is subject to the provisions of the New Jersey Uniform Construction Code [N.J.A.C. 5:23]. The Contractor shall verify all code requirements and bring any discrepancies between code requirements and the construction documents to the attention of the Architect prior to commencing with construction.
- B. It is the Contractor's responsibility to inspect and assess the project and to fulfill the intent of the work indicated by the contract documents. Contractor shall verify all conditions and dimensions within the contract limits. Deviations from the contract documents necessitated by field conditions shall be brought to the attention of the Architect.
- C. Contractor shall bring errors and omissions which may occur in contract documents to the attention of the Architect and instructions shall be obtained from the Architect before proceeding with affected work. The Contractor will be held responsible for the results of any errors, discrepancies, or omissions in the contract documents which can readily or reasonably be determined and for which

the Contractor failed to notify the Architect before construction and/or fabrication of subject work.

- D. Details and sections on the drawings are taken at specific locations and are intended to serve as typical construction for all similar conditions. Modifications shall be made by Contractor to accommodate minor variations.
- E. Do not scale the drawings. Refer to written text and dimensions for information. The Contractor and Sub-Contractor shall verify all dimensions and job conditions at the job site sufficiently in advance of work to be performed to assure the orderly progress of the work.
- F. All dimensions are to face of GWB and face of block unless noted otherwise drawings.
- G. The Contractor shall make no structural changes without written approval of the Architect. Contractor shall insure safety and stability of structure(s) at all times during the construction period.
- H. The Contractor shall limit the use of the premises to the areas indicated. Portions of the site beyond areas on which work is indicated are not to be disturbed. The Contractor shall maintain the premises clean and free of all trash, debris and shall protect all adjacent work from damage, soiling, paint overspray, etc. All fixtures, equipment, glazing, floors, etc., shall be left clean and remain ready for occupancy throughout the duration of the project.
- I. Do not unreasonably encumber the work area with materials or equipment. Confine stockpiling of materials to the areas approved by the Owner. If additional storage is necessary, obtain and pay for such storage off site. Maintain the site in a clean and sanitary condition.
- J. Contractor to provide temporary protection to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent spaces from damage.
- K. Contractor to keep project area clean and free of debris. Contractor shall maintain a supply of hardhats for use by visitors to the site and enforce the use thereof.
- L. The Contractor shall monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality. Comply fully with manufacturers' instructions. Protect installed work and provide special protection where specified in individual specification Sections.
- M. All applicable local, state and federal regulations shall be met for handicap accessible buildings.
- N. The Contractor shall review the Contract Drawings and Specifications for other items of work required to provide a complete project and shall provide them in his

Total Price Bid so as to impose no additional cost to the Owner for the completion of this project.

- O. The Contractor shall be responsible for obtaining all necessary local approvals, permits, registrations and/or certifications and construction. The Contractor must follow and comply with all applicable requirements and standards as required under the approvals, permits, registrations and/or certifications and construction permits obtained for this project. Also, reference the “Supplementary Conditions” for additional permit requirements.
- P. The Owner and its Architect shall not be responsible for job safety. The Contractor shall be responsible for all job safety requirements for his employees and sub-contractors in the performance or the work under this project.
- Q. The Contractor shall supply, place, and maintain at all times during the term of the Contract such safety equipment and procedures as are required for protection of persons and property.
- R. The Contractor is responsible for all lines, elevations, and measurements, exercising precaution to verify all dimensions shown on the Contract Drawings.
- S. The Contractor shall be responsible for surface restoration work as required to complete the installation and restore all areas affected due to the performance of the work under this contract. All affected areas shall be left in the same or in a condition better than existed before the start of construction or as shown on the Contract Drawings.

### 1.3 WORK COVERED BY CONTRACT DOCUMENTS – BASE BID & ADD/ALTERNATES

- A. Provide and pay for all labor, superintendence, materials, tools, transportation, services, licenses, taxes, equipment and all means of construction necessary and reasonably incidental to the completion of the improvements required for the “Camden County College Fire Training Structure”, in Blackwood, New Jersey as specified herein and as shown on the Contract Drawings.
- B. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.
- C. The work for this project under the Base Bid includes the following:
  - 1. The preparation of an existing site for construction of new asphalt and concrete elements, electrical requirements, and erection of new pre-engineered fire training structure.
  - 2. The work includes, but is not limited to: site demolition, grading, concrete slab/footings/foundation and sidewalk, asphalt paving, construction of pre-engineered structure, installation of new electric service equipment.

3. Without intending to limit or restrict the amount of work included and solely for the convenience of the Contractor, the major items of work included shall comprise the following:
  - i. Site demolition and earthwork, concrete and asphalt construction.
  - ii. New pre-engineered structure to be erected on site, new electric service and equipment.
  - iii. Complete finish of all building and site elements including any items required for a complete project, and other items shown and/or listed on the attached contract drawings. Installation shall include all labor required by the manufacturer to provide a completed project as described on the attached contract drawings. All final dimensions shall be confirmed by the Contractor in the field prior to beginning construction.

#### 1.4 CONTRACTOR USE OF PREMISES

- A. Limit use of the premises to construction activities in areas indicated.
  1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
  2. Contractor to secure and protect work area from rest of the facility for dust and noise control.
  3. Contractor to coordinate work under this bid with other work being performed at the project location to maintain access and project schedules throughout duration of the work under this bid.

END OF SECTION

## MEASUREMENT AND PAYMENT

### PART 1 - GENERAL

#### 1.1 BID/PAY ITEMS / SCHEDULE OF VALUES

- A. All payments or credits shall be made on the basis of the TOTAL PRICE BID by the Contractor. The Contractor shall submit a detailed and balanced schedule of values. Following the acceptance of the schedule of values by the Owner, progress payments may be requested based on the approved schedule.
- B. The Contractor shall prepare his schedule of values so that it reflects the actual costs which the bidder anticipates the performance of work under each item delineated so that the item includes all costs associated with the bidders anticipated profit, overhead and costs to perform the work.
- C. The Owner may increase or decrease the quantity of work to be done under any item and that the Contractor will only be paid for actual quantity of work provided based on the prices delineated under the Owner approved schedule of values.
- D. The schedule of values will be considered materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.
- E. No progress payments will be made for Lump Sum items for which the Contractor has not included a price breakdown in the Owner approved schedule of values.
- F. Measurement for partial payments will be made by the Architect and will be based on the work that the Architect considers complete, and the assigned values in the Owner approved schedule of values. The Architect shall be the sole judge of the percentage of completion of a Lump Sum item.
- G. Individual schedule of value items will not be considered complete until installation and testing are complete and the item is placed in service, or in the Architect's judgment is available to be placed in service.

#### 1.2 PROGRESS PAYMENTS (PARTIAL PAYMENTS)

- A. Progress payments for the approved and measured quantities of an item will be subject to the retainage as set forth in the General conditions.
  - 1. Progress payments approved for temporary measures are made based on the temporary measure being maintained by the Contractor until replaced by permanent measures or until no longer required and the Contractor is directed by the Architect to remove the temporary measure.
  - 2. When in the opinion of the Architect, the Contractor is not maintaining the temporary measure, the Contractor shall be so notified by the Architect.
  - 3. Following notice to the Contractor the Architect will increase retainage on Contractors future application or applications for progress payments in an

amount equal to or exceeding that previously approved for the temporary measures that are not being maintained by the Contractor.

#### 1.4 MEASUREMENT OF QUANTITIES

- A. The Architect shall be the sole judge of the completeness of the work as well as the quantity of the item installed in the work.
- B. Completed work shall be measured for payment by the Contractor. The measurement shall be performed in the presence of the Architect. The measurement shall be certified by the Contractor and witnessed by the Architect.
- C. Method of measurements shall be as delineated on the Owner approved schedule of values.
- D. The day the measurement is performed the Contractor shall provide to the Architect one copy of the certified and witnessed measurements.
- E. Contractors application for payment shall be accompanied by certified and witnessed measurement records covering all work for which payment is requested.

#### 1.5 CREDITS

- A. No payments will be made for items or quantities of items not installed in the work. The Contractor will be paid only for work and materials that are installed and accepted.

#### 1.6 WORK INCLUDED IN PRICE BID

- A. The total price bid by the Contractor shall include all labor (based on NJ Prevailing Wages), superintendence, materials, tools, transportation, plant and equipment, overhead and profit, and all means of construction necessary and reasonably incidental to the complete and fully operational "Camden County College Smoke Tower Structure" in accordance with the Contract Documents. No additional or separate payments will be allowed under this contract.
- B. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called out in detail without additional cost to the Owner and shall be considered to be included in the total price bid by the Contractor.
- C. Measurement and payment will be made in accordance with the approved schedule of values for work and materials that are installed and accepted by the Architect.

END OF SECTION

## **ALLOWANCE**

### **PART 1 - GENERAL**

1.1 DESCRIPTION OF THE WORK: The Contractor shall provide for a \$10,000 allowance for “if and where work” as directed by the Owner and/or Architect.

1.2 The Contractor will only be paid for actual work directed by the Owner.

**END OF SECTION**

## **SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Section Includes:
  - 1. Submittal procedures.
  - 2. Product Data, Shop Drawings, and Samples.
  - 3. Assurance/Control submittals.
    - a. Certificates.
    - b. Manufacturer's installation instructions.
  - 4. Architect's action.

#### **1.2 SUBMITTALS**

- A. Submit two copies of proposed Schedule of Submittals to Architect within 30 days after receipt of Notice to Proceed. List all items require submittal for review and approval by Architect. Utilize Submittal Schedule, AIA Document G712, or other approved format.
- B. Schedule of Submittals: Include the following.
  - 1. Indicate type of submittal; product data, shop drawing, sample, certificate, or other submittal.
  - 2. Identify by Plan and/or Detail number where item is specified, and description of item being submitted.
  - 3. Indicate scheduled date for initial submittal.
- C. Coordinate Schedule of Submittals with Construction Schedule. Revise and update Schedule of Submittals when required by changes in the Construction Schedule. Provide Architect with updated schedules within 2 days of date schedule is revised.

#### **1.3 SUBMITTAL PROCEDURES**

- A. Transmit each submittal with Architect accepted form. Submit the number of opaque reproductions which the Contractor requires, plus two (2) copies which shall be retained by the Architect.
- B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.



- C. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- D. For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.
- E. Revise and resubmit when required, identify all changes made since previous submission.

#### 1.4 PRODUCT DATA

- A. Product data includes printed information such as catalog cuts, manufacturer's published instructions, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, performance curves and other similar items.
- B. Submit the number of copies which the Contractor requires, plus two copies which will be retained by Architect.
- C. Mark each copy to identify applicable products, models, options, and other data. Submissions which do not specifically indicate the products being used from among multiple products shown will be rejected without review for resubmittal. Supplement manufacturers' standard data to provide information unique to this Project.

#### 1.5 SHOP DRAWINGS

- A. Submit in the form of one reproducible transparency and one opaque reproduction.
- B. Shop Drawings: Submit for review. After review, produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article above.
- C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

#### 1.6 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes in colors selected, textures, and patterns for Architect selection.
- C. Include identification on each sample, with full Project information.

- D. Submit four (4) samples; one of which will be retained by the Architect, minimum of three (3) sets.

#### 1.7 CERTIFICATES

- A. When specified on the Construction Drawings or requested by the Owner, submit certification by manufacturer to Architect, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect.

#### 1.8 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified on the Construction Drawings, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Architect in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

#### 1.9 ARCHITECT ACTION

- A. For submittals where action and return is required or requested, Architect will review each submittal, mark to indicate action taken, and return promptly; generally within 10 calendar days from date of receipt.
  - 1. Compliance with specified characteristics is the Contractor's responsibility.
  - 2. Submittals for information, closeout documents, record documents and other submittals for similar purposes, no action will be taken.
- B. Action Stamp: Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken.
  - 1. "No Exceptions Taken": Final Unrestricted Release. Where submittals are marked "No Exceptions Taken", that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
  - 2. "Approved as Noted": Final-But-Restricted Release. When submittals are marked "Approved as Noted", that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. "Rejected" or "Resubmit": Returned for Resubmittal. When submittal is marked "Rejected" or "Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
4. Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be retained for the Architect's reference purposes and/or discarded. No return to the Contractor will occur.

END OF SECTION

## PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Administrative and supervisory personnel.
2. Submittals.
3. Contractor quality control.
4. Coordination.
5. Project coordination.
6. Preconstruction meeting.
7. Progress meetings.
8. Progress Reports.
9. Pre-installation meetings.
10. Schedule of Values.
11. Application for Payment.
12. Change Procedures.

#### 1.2 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Project Manager/Administrator: Contractor Representative experienced in administration, supervision, and quality control of building expansion and alteration construction, similar to Work of this Project, including electrical work.
- B. Project Field Superintendent: Contractor Representative experienced in general field supervision of building construction, similar to Work of this Project, including electrical work, to supervise, direct, inspect and coordinate Work of Contractor, subcontractors, suppliers and installers, and expedite Work to assure compliance with Construction Schedules. Project Field Superintendent shall be a full-time on-site job assignment.

#### 1.3 SUBMITTALS

- A. Submit shop drawings, product data, samples, and other required submittals, in accordance with Section 013000 - Submittal Procedures, for review and compliance with Contract Documents, and for conformance to field dimensions and clearances.
- B. Submit Requests for Information and interpretation of Contract Documents in a timely manner and obtain replies from Architect prior to proceeding with the work in question.
- C. Submit schedule of values not less than seven (7) days prior to first payment request. Submit "pencil copy" of proposed Payment Application (fax or email is acceptable) not less than 96 hours prior to the scheduled site meeting at which the Payment Application is to be presented.

#### 1.4 CONTRACTOR QUALITY CONTROL

- A. Coordinate all program activities through the representatives of the local utility companies, or their assigned agents as required.
- B. Coordinate scheduling of inspection and testing required by individual specification Sections and in accordance with Section 014000 - Quality Control.
- C. Coordinate schedule for testing to be performed by the Owner under separate contract.

#### 1.5 COORDINATION DRAWINGS

- A. Prepare and distribute coordination drawings where close coordination is required for installation of Products and materials fabricated off-site by separate entities, and where limited space availability requires maximum utilization of space for efficient installation of different components. Show interrelationship of components shown on separate shop drawings. Indicate required installation sequences.

#### 1.6 PROJECT COORDINATION

- A. Coordinate construction activities and work of all trades under the construction documents and Work of Contract to facilitate orderly installation of each part of Work. Coordinate construction operations included under the construction documents and Contract that are dependent upon each other for proper installation, connection, and operation.
- B. Where installation of one part of Work is dependent on installation of other components, either before or after that part of Work, schedule construction activities in sequence required to obtain uninterrupted installation.
- C. Obtain drawings, manufacturer's product data, instructions, and other data to provide a complete and proper installation.
  - 1. Check field dimensions prior to installing products. Verify necessary clearances and means of access from equipment storage to final position.
  - 2. Make data and information available to trades involved.
- D. Ensure that utility requirements for the installation of service laterals, meter locations, etc. are compatible current regulations.
- G. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination.
- H. After Owner occupancy of Project, coordinate access to project for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## 1.7 PRE-CONSTRUCTION MEETING

- A. Owner and Architect will schedule a meeting after Notice of Award.
- B. Attendance: Owner, Architect, Contractor, Project Superintendent, and Contractor Quality Control Representative, plus others at the invitation of the Owner.
- C. Agenda:
  - 1. Submission of executed bonds and insurance certificates.
  - 2. Distribution of Contract Documents.
  - 3. Submission of schedule of values.
  - 4. Designation of personnel representing the parties in Contract.
  - 5. Procedures and processing of Requests for Information, field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and contract closeout procedures.
  - 6. Scheduling.
  - 7. Review of any special conditions or requirements for interim inspections.
  - 8. Construction facilities and temporary controls.
- D. Architect or authorized representative will record minutes and distribute copies to participants, and those affected by decisions made.

## 1.8 PROGRESS MEETINGS

- A. Architect or authorized representative will schedule and administer meetings throughout progress of Work at intervals as agreed upon by the Owner, Architect and Contractor.
- B. Architect or authorized representative will make arrangements for meetings, prepare agenda with copies for participants and preside at meetings.
- C. Attendance: Job Superintendent, Contractor Quality Control Representative, major Subcontractors and suppliers, and Architect as appropriate to agenda topics for each meeting.
- D. Architect or authorized representative will record minutes and distribute copies to participants, and those affected by decisions made.

## 1.9 PROGRESS REPORTS

- A. Construction Progress Schedules
  - 1. Submit initial progress schedule in duplicate within 15 days after "Commencement of Work" for Owner/Architect review.
  - 2. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.

3. Submit a horizontal bar chart with separate line for each section of Work, identifying first work date of each week.

#### 1.10 SCHEDULE OF VALUES

- A. Submit a construction cost breakdown after contract award to the Architect using AIA Form G703, or other approved format. Contractor may be required to utilize established formats as may be required by entities providing funding for the project.

#### 1.11 APPLICATION FOR PAYMENT

- A. Submit four (4) original copies of each application in the prescribed format for review, signature & processing at the Project Meeting assigned for that purpose. Submit "pencil copy" of proposed Payment Application (fax or email is acceptable) not less than 96 hours prior to the scheduled site meeting at which the Payment Application is to be presented.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly.
- D. Following completion of the following requirements, final payment request may be submitted:
  1. Complete work listed as incomplete at time of substantial completion, or otherwise assure Owner of subsequent completion of individual incomplete items.
  2. Settle liens and other claims, or assure Owner of subsequent settlement.
  3. Submit proof of payment on fees, taxes and similar obligations.
  4. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items.
  5. Completion of requirements specified in "Project Closeout" section.
  6. Obtain consent of surety for final payment.

## 1.12 CHANGE PROCEDURES

- A. Submit backup materials and costs associated with any proposed Change Order to the Owner & Architect for review. DO NOT proceed with any work for which a Change Order is necessary without written approval to do so. Failure to obtain written approval may void Contractor's claim associated with the changed work, or the acceptance thereof.
- B. Change Procedures: Change Order Forms - AIA G701 or other approved format.

END OF SECTION



# QUALITY CONTROL

## PART 1 - GENERAL

### 1.1 SUMMARY

- A. Section Includes:
  - 2. Quality control procedures.
  - 3. Contractor's testing and inspection reports.
  - 4. Non-compliance check-off list.
  - 5. Completion and inspection of Work.
  - 6. Field samples.

### 1.2 QUALITY CONTROL PROCEDURES

- A. Monitor quality control over Contractor staff, subcontractors, suppliers, manufacturer's, products, services, site conditions, and workmanship.
- B. Comply fully with manufacturer's published instructions, including each step in sequence of installation.
- C. Should manufacturer's published instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons who are thoroughly qualified and trained in their respective trade, to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- G. Perform tests required by governing authorities having jurisdiction and utilities having jurisdiction.

### 1.3 CONTRACTOR FIELD INSPECTION AND TESTING

- A. Contractor: Test and Inspect Work provided under this Contract to ensure Work is in compliance with Contract requirements.
- B. Preparatory Inspection: Performed prior to beginning Work and prior to beginning each segment of Work and includes:

- C. Initial Inspection: Performed when representative portion of each segment of Work is completed and includes:
  - 1. Performance of required tests.
  - 2. Quality of workmanship.
  - 3. Review for omissions or dimensional errors.
  - 4. Examination of products used, connections and supports.
  - 5. Approval or rejection of inspected segment of Work.
- D. Follow-Up Inspections: Performed daily, and more frequently as necessary, to assure non-complying Work has been corrected.
- E. Testing and Inspection: Perform testing and inspection in accordance with Owner's and/or Municipal requirements.

#### 1.5 CONTRACTOR'S TEST AND INSPECTION REPORTS

- A. Prepare and submit, to Architect, a written report of each test or inspection signed by Contractor Quality Control Representative performing inspection within 2 days following day inspection was made.
- B. Include the following on written reports of inspection:
  - 1. Cover sheet prominently identifying that inspection "CONFORMS" or "DOES NOT CONFORM" to Contract Documents.
  - 2. Date of inspection and date of report.
  - 3. Project name, location, solicitation number, and Contractor.
  - 4. Names and titles of individuals making inspection, if not Contractor's Project Field Superintendent.
  - 5. Description of Contract requirements for inspection by referencing Specification Section.
  - 6. Description of inspection made, interpretation of inspection results, and notification of significant conditions at time of inspection.
  - 7. Requirements for follow-up inspections.

#### 1.6 NON-COMPLIANCE CHECK-OFF LIST

- A. Maintain check-off list of Work that does not comply with Contract Documents, stating specifically what is non-complying, date faulty Work was originally discovered, and date Work was corrected. No requirement to report deficiencies

corrected same day it was discovered. Submit copy of Non-Compliance Check-Off List of non-complying work items to Architect on a weekly basis.

#### 1.7 COMPLETION AND INSPECTION OF WORK

- A. Prior to final acceptance by Architect, submit a certification signed by Contractor to Architect stating that all Work has been inspected and all Work, except as specifically noted, is complete and in compliance with Contract Documents.
- B. Record Documents: By Contractor Quality Control Representative. Ensure that "As-Builts" required by Section 017001 - Closeout Submittals, are marked to show any deviations which have been made during the course of construction and are kept current on a daily basis. Upon completion of the Work, certify the accuracy of the "As-Builts" and submit to Architect.

#### 1.8 FIELD SAMPLES

- A. Construct field samples at the site for review as requested by the Owner or Owner's representative. Acceptable samples represent a quality level for work. Field samples shall remain in place until subject project work is completed and accepted.

END OF SECTION

## MATERIAL / MANUFACTURER SUBSTITUTION POLICY

### PART 1 - GENERAL

#### 1.1 MATERIALS AND EQUIPMENT

##### A. Products:

1. Products: Means 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 or components specifically identified for reuse.
2. Use interchangeable components of the same manufacture for similar components.

##### B. Product Options:

1. Products specified by Reference Standards or by Description Only: Any product meeting those standards or description and approved by the Architect.
2. Products specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named by the Architect.

#### 1.2 SUBSTITUTION POLICY

- A. Contractor must take note that certain provisions within the drawings for these projects have been designed to utilize a specific product(s) available only through the designated manufacturer(s). The products and materials specified in this manner have been identified by the Owner and/or the Architect as the "basis of design" for the project(s), and may not be substituted unless specifically agreed to in writing by the Owner and/or the Architect. This policy will be strictly adhered to in order to maintain uniform appearance, function, and maintenance considerations for the project.
- B. If a specified product or material is no longer available, or a substitution is desired for other reasons, for items specified as a specific model number, color, and/or manufacturer, the proposed product will be required to be equivalent in every respect to the item specified. The criteria for approval as an "equivalent" shall include, but not be limited to, performance, dimension, appearance, finish, warranty, and/or the interchangeability of replacement parts with the product originally specified.
- C. Proposed substitutions shall be submitted to the Architect in writing, including detailed shop drawings and product data for the proposed product, as applicable.

END OF SECTION

## EXECUTION REQUIREMENTS

### 1.1 SUMMARY

#### A. Section Includes:

1. Installation.
2. Cleaning.
3. Starting and adjusting.

#### B. Installation:

1. Refer to installation requirements included on the drawings or indicated in the manufacturers written specifications.
2. For each Product, inspect substrate and conditions under which the Work will be performed. Do not proceed until unsatisfactory conditions have been corrected.
3. Comply with manufacturer's published installation instructions and recommendations, to extent that instructions and recommendations are more explicit or stringent than requirements in Contract Documents.
4. Inspect Products immediately upon delivery to Project Site ready for installation.
  - a. Inspect Products immediately before start of application, installation, or erection.
  - b. Reject damaged and defective Products.
5. Verify and check dimensions and measurements before start of installation or erection.
6. Coordinate closing-in of Work with required inspections and tests.
  - a. Do not cover Work until inspected and approved by appropriate person or entity.
7. Provide fasteners, attachments, connection devices, and methods as indicated on Drawings or as specified.
  - a. Where not indicated or specified provide appropriate methods necessary for securing Work.
  - b. Secure Work plumb, true to line and level.
  - c. Provide for expansion and building movement.

## 1.2 CLEANING

- A. Cleaning During Construction: Maintain the project site as clean as practicable throughout construction period, including the removal of debris, trash, etc.
- B. Final Cleaning:
  - 1. Use cleaning materials and agents recommended by manufacturer or fabricator of surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.
  - 2. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's published instructions.
  - 3. Complete following cleaning operations before requesting Punchlist inspection for Substantial Completion of Project by Architect. Project shall be "move-in" ready for Punchlist inspection.
    - a. Clean Project Site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
    - b. Remove tools, construction equipment, machinery and surplus material from Project Site.
    - c. Remove snow and ice to provide safe access to building.
    - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
    - g. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap. Shampoo if required.
    - h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are 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 labels.
  - j. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.
  - k. Wipe surfaces of mechanical and electrical equipment, and other similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
  - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - m. Replace air disposable filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.
  - n. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace any burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.
  - o. Leave Project clean and ready for occupancy.
4. Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from Project Site and dispose of in accordance with requirements of local authorities having jurisdiction.

### 1.3 STARTING AND ADJUSTING

#### A. Starting Systems:

- 1. Coordinate schedule for start-up of various equipment and systems.
- 2. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- 3. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- 4. Verify wiring and support components for equipment are complete and tested.
- 5. Execute start-up under supervision of applicable Contractors' personnel in accordance with manufacturers' instructions.
- 6. When specified in individual specification Sections, require manufacturer to provide authorized representative be present at Project Site to inspect,

check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

B. Demonstration and Instruction:

1. Demonstrate operation and maintenance of Products to Owner's personnel 2 weeks before Date of Final Acceptance.
2. Demonstrate Project equipment and provide operation instruction by qualified installer representative who is knowledgeable about Project.
3. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

END OF SECTION



## CLOSE-OUT SUBMITTALS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Operation and Maintenance manuals.
  2. Product warranties.
  3. "Record As-Built Drawings".

#### 1.2 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
1. Prepare data in the form of an instructional manual.
  2. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
  3. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
  4. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
  5. Text: Manufacturer's published data, or typewritten data on 20 pound paper.
  6. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
  7. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, in three parts as follows:
    - a. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
    - b. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification Section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      - 1) Significant design criteria.

- 2) List of equipment.
  - 3) Parts list for each component.
  - 4) Operating instructions.
  - 5) Maintenance instructions for equipment and systems.
  - 6) Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
- c. Part 3: Project documents and certificates, including the following:
- 1) Shop drawings and product data.
  - 2) Certificates.
  - 3) Photocopies of warranties.

### 1.3 PRODUCT WARRANTIES

- A. Submit Warranties required for specific Products or Work as specified in each individual Section.
- B. List of Minimum Required Warranties and Guarantees (where applicable):
1. General Contractor - Two (2) year guarantee for all labor and materials for the entire project.
  2. HVAC Contractor - Two (2) year guarantee for all labor and materials and manufacturer's standard guarantees for equipment within the scope of this contract.
  3. Electrical Contractor - Two (2) year guarantee for all labor and materials, and manufacturer's standard guarantees for all equipment and fixtures within the scope of this contract.
  4. Windows and Doors - Manufacturer's standard guarantee, one (1) year minimum.
  5. Carpeting - Manufacturer's standard guarantee, one (1) year minimum for material and installation.
  6. Major Appliances - e.g., range, range hood, refrigerator, disposal, washer and dryer, thru-wall A.C. units, dishwashers, etc. - Manufacturer's standard guarantees, one (1) year minimum.
- C. Form of Submittals:

1. Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers.
2. Cover: Identify each binder with typed or printed title WARRANTIES with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
3. Table of Contents: Neatly typed, in sequence of Table of Contents of Project Manual, with each item identified with number and title of specification Section in which specified, and name of Product or Work item.
4. Separate each warranty with index tab sheets keyed to Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

D. Time of Submittals:

1. For equipment or component parts of equipment put into service during construction with Architect approval, submit documents within 10 days after acceptance.
2. Make other submittals within 10 days after Date of Final Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Final Completion, submit within 10 days after acceptance.

1.4 "PROJECT RECORD AS-BUILT DRAWINGS"

A. Project Record Documents required include:

1. Marked-up copies of Contract Drawings.
2. Marked-up copies of Shop Drawings.
3. Marked-up copies of Contract Modifications.
4. Marked-up Product Data submittals.
5. Field records for variable and concealed conditions.
6. Record information on Work that is recorded only schematically.

B. Maintenance of Documents: Store record documents in field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain and protect record documents from damage in a clean, dry, legible condition. Make documents available at all times for inspection.

C. Record Drawings:

1. During construction, maintain a set of black-line white-prints of Contract Drawings and Shop Drawings for Project Record Document purposes.
  - a. Mark these Drawings to indicate actual installation where installation varies from installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
    - 1) Dimensional changes to Drawings.
    - 2) Revisions to details shown on Drawings.
    - 3) Depths of foundations below first floor.
    - 4) Locations and depths of underground utilities.
    - 5) Revisions to routing of piping and conduits.
    - 6) Revisions to electrical circuitry.
    - 7) Actual equipment locations.
    - 8) Duct size and routing.
    - 9) Locations of concealed internal utilities.
    - 10) Changes made by Contract Modification.
    - 11) Details not on original Contract Drawings.
  - b. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
  - c. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of Work at same location.
  - d. Mark important additional information which was either shown schematically or omitted from original Drawings.
  - e. Note construction change directive numbers, alternate numbers, Contract Modification numbers and similar identification.
  - f. Contractor bears full Responsibility for Markup and Supervision of the As-Built documentation throughout the course of the project. Where feasible, individual or entity who obtained record data,

whether individual or entity is installer, subcontractor, or similar entity, is required to prepare mark-up on Record Drawings.

- 1) Accurately record information in an understandable Drawing technique.
  - 2) Record data as soon as possible after it has been obtained. In case of concealed installations, record and check mark-up prior to concealment.
- g. At time of Final Acceptance, submit record Drawings to Architect for Owner's records. Organize into sets, bind and label sets for Owner's continued use.
2. Copies and Distribution: After completing preparation of Record Drawings, print 3 black-line prints of each Drawing, whether or not changes and additional information were recorded. Organize copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.
- a. Organize and bind original marked-up set of prints that were maintained during construction in same manner.
  - b. Organize record transparencies into sets matching print sets. Place each set in durable tube-type Drawing containers with end caps. Mark end cap of each container with suitable identification.

D. Additional Record Submittals:

1. Refer to other specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete additional records and place in order, properly identified and bound or filed, ready for use and reference.
  - a. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:
    - 1) Load and performance testing.
    - 2) Inspections and certifications by governing authorities.
    - 3) Fire resistance and flame spread test results.
    - 4) Final inspection and correction procedures.

END OF SECTION

# DEMOLITION

## PART 1 - GENERAL

### 1.1 SUMMARY

- A. Provide all labor, superintendence, materials, tools, transportation, plant and equipment and all means of construction necessary and reasonably incidental to:

Existing site to be prepared for construction of new reinforced concrete slab and sidewalk which will support new pre-engineered fire training structure that will be erected on site by Bidder. Site improvements include demo of existing asphalt and concrete, excavation and fill, construction of new concrete piers and footings, construction of new concrete slab, concrete sidewalk, full depth asphalt paving, and extension of electrical service to the new building.

- B. The Contractor shall be responsible for obtaining all necessary approvals, permits, registrations and/or certifications and construction permits including, fees for the same. The Contractor must follow and comply with all applicable requirements and standards as required under the approvals, permits, registrations and/or certifications and construction permits obtained for this project.

### 1.2 PROJECT CONDITIONS

- A. Dust Control: To prevent unnecessary spread of dust during performance of demolition work (including crushing of concrete footings and foundations), thoroughly moisten surfaces and debris as required to prevent dust being a nuisance to the public, neighbors and concurrent performance of other work on the site. Contractor shall be responsible for securing a supply of water in accordance with applicable regulations. Contractor shall be responsible for providing all water required at his cost.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Materials needed or required for temporary protection in the form of barricades, fences, enclosures, etc., may be "used" construction materials of sound condition and reasonably clean. However, the condition of same materials shall meet or exceed the requirements of governing agencies or approving bodies as may be involved with the work.
- B. Equipment, machinery and apparatus, motorized or otherwise, used to perform the demolition work may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements for the duration of the project.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Prior to performance of the actual work, carefully inspect the entire site and structures and locate, and verify with the Architect / Engineer those structures and objects designated to be demolished and removed and those structures and objects to be preserved.
- B. Locate existing exposed and buried active utilities and determine the requirement for their protection, or their disposition with respect to the demolition work. Refer to Section 3.7 for additional requirements.

### 3.2 PERFORMANCE

- A. Construct applicable SESC measures before clearing site. Before beginning excavation or embankment construction, clear the site within the limits of construction. Clear the ground surface of trees, brush, weeds, roots, matted leaves, small structures, debris, and other objectionable material, vegetation, and growth where its existing position conflicts with the limits of construction.
- B. Conduct demolition to minimize interference with adjacent structures or properties and protect existing structures/surfaces to remain.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Project Manager and authority having jurisdiction; do not resume operations until directed.
- C. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.
- D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- E. Sprinkle demolition areas with water to minimize dust. Provide hoses and water connections for this purpose.

### 3.3 DEBRIS REMOVAL

- A. Dispose of demolition debris off site in a lawfully approved landfill area. Licensed to receive demolition materials including asbestos and lead.

### 3.4 ABANDONED EQUIPMENT AND MACHINERY

- A. Existing equipment and machinery in or on the structures shall become the property of the Contractor and may not be disposed of on the site but shall be removed and disposed of in a lawful manner off site.

### 3.5 CONCRETE AND MASONRY REMOVAL

- A. Under the base bid, the Contractor must demolish all existing concrete

foundations, footings, and floor slabs that are indicated to be demolished whether shown or not. Foundations, footings, and floor slabs comprise all concrete, masonry, steel, wood, or other materials placed at or below grade that provide support for the existing structure(s) above which are included in the scope of building and/or site demolition. The Contractor is responsible for removing all foundation, footing, and slab materials from the site and providing fill of equivalent volume. All non concrete debris and other materials must be removed from the demolished or crushed concrete foundations and floor slabs.

- B. Where concrete building or site elements are demolished as a part of the work, the Contractor may crush demolished concrete material to pieces 3" or smaller and place the crushed concrete materials to bring area of demolition up to level of adjacent grade after demolition and crushing of the existing building concrete foundations and floor slabs if doing so is approved as a base for future work and agreed to by Owner. The crushed concrete fill materials shall be in layers not more than 8" loose depth and shall be compacted by heavy equipment.
- C. Any excess crushed concrete material not used on site in a manner approved by Owner shall be removed from the project site by the Contractor and disposed of at the Contractor's cost.
- D. Demolition and crushing of concrete foundation and slab materials must be performed to meet the requirements of DUST CONTROL as specified herein.
- E. Under base bid, the contractor shall be required to install clean top soil and grass seed to all disturbed areas.

### 3.6 BACKFILLING

- A. Where soil and site elements are removed, the Contractor must provide and install all required imported fill and earthwork operations to bring area of demolition up to level of adjacent grade after demolition and removal of any existing building footings, foundations, or floor slabs in accordance. Any fill material must be suitable as fill for intended purpose of area being filled. Areas to be seeded or landscaped must receive suitable topsoil material; areas to be built upon must receive suitable compactible fill.

### 3.7 UTILITIES

- A. Contractor must notify the various utility companies when the work is to begin so that gas and electric services may be discontinued if necessary and all wires and equipment may be disconnected in accordance with the rules and regulations of the utility companies. IN NO CASE SHALL CONTRACTOR UNDERTAKE EXCAVATION WITHOUT UNDERGROUND UTILITY PROPERTY BEING MARKED BY THE VARIOUS UTILITY COMPANIES.
- B. The Contractor shall plug, cap or otherwise disconnect all existing utilities as indicated on the Contract Drawings or as may enter the existing building in accordance with the individual utility company requirements. In the absence of specific utility company requirements, the Contractor shall use acceptable industry means and methods.



### 3.8 PERMITS AND LICENSES

- A. Contractor shall obtain and pay for all permits, fees and other charges required by the municipality, county or state, and / or utility companies' regulations.

### 3.9 PROTECTION

- A. Exercise care during demolition work to confine demolition operations to the site. The physical means and methods used for protection are at the Contractor's option. However, the Contractor will be completely responsible for replacement and restitution work of whatever nature at no expense to the Owner.
- B, Additionally, if public safety is endangered during the progress of the demolition work, provide adequate protective measures to protect public pedestrian and vehicular traffic on streets and walkways.
- C Signs, signals and barricades used shall conform to requirements of Federal, State and local laws, rules, regulations, and precautions.

### 3.10 EXPLOSIVES AND BLASTING

- A. Not permitted in performance of demolition work.

END OF SECTION

## SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section for the Camden County College Smoke Tower Structure project for partial building demolition as indicated on the contract drawings and as specified herein.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building / structure and ground cover.

#### 1.3 DEFINITIONS

- A. Demolish: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Demolish and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- 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. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

## 1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review structural load limitations of existing structure.
  - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 5. Review areas where existing construction is to remain and requires protection.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Predemolition Photographs: Submit before Work begins.

## 1.7 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.

## 1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. 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.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE 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. 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.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

- B. 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. 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 or site.
  - 2. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
    - a. Piping to Be Demolished: Demolish 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 Demolished: Disconnect and cap services and remove equipment.
    - d. Equipment to Be Demolished and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    - e. Equipment to Be Demolished and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    - f. Ducts to Be Demolished: 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.

### 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.
- 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. 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.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- 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.

### 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. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. 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 reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
  - 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.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.7 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.

END OF SECTION

## CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Slabs-on-grade.
  - 2. Footings and foundations.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.
  - 3. Steel reinforcement and accessories.
  - 4. Curing compounds.
  - 5. Bonding agents.
  - 6. Adhesives.
  - 7. Repair materials.
- E. Field quality-control test and inspection reports.



## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

## PART 2 - PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1. Plywood, metal, or other approved panel materials.
- B. Chamfer Strips: Wood, metal, PVC, or rubber strips, , minimum.
- C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Plain-Steel Wire: ASTM A 82.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

## 2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

## 2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
- B. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
  - 1. Maximum Coarse-Aggregate Size: 1-1/2 inches for foundations and walls, 3/4 inch nominal for slabs.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

## 2.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.

3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.6 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.
- B. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

## 2.7 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating.

## 2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

## 2.9 REPAIR MATERIALS

- A. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

## 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
  1. Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability.
  2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

## 2.11 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings, Piers, and Foundation Walls: Proportion normal-weight concrete mixture as follows:
  1. Minimum Compressive Strength: 3,000 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.55.
  3. Slump Limit: 4 inches, plus or minus 1 inch.
  4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
- B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
  1. Minimum Compressive Strength: 4,000 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.45
  3. Minimum Cementitious Materials Content: 520 lb/cu. yd.

4. Slump Limit: 3 inches, plus or minus 1 inch.
5. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

## 2.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.
  1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 EXECUTION

### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
  1. Class B, 1/4 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces.
  1. Install keyways, reglets, recesses, and the like, for easy removal.
  2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and

securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
  - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
  - 3. Install dovetail anchor slots in concrete structures as indicated.

### 3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

### 3.4 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
  - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.

### 3.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

### 3.6 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
- D. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations 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 lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - 4. Slope surfaces uniformly to drains where required.
  - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.



2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

F. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.8 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view.

C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

### 3.9 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces to receive trowel finish.
- C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighthen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
1. Apply a trowel finish to surfaces exposed to view.
  2. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M):
    - a. Finish and measure surface so gap at any point between concrete surface and an unlevelled freestanding, 10-ft long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/4 inch and also no more than 1/16 inch in 2 feet.
- D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### 3.10 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

### 3.11 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - 3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will

match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
2. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
5. Correct low areas scheduled to remain exposed with a repair topping.
  - a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
  - b. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.
  - a. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around.
  - b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
  - c. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate.
  - d. Place, compact, and finish to blend with adjacent finished concrete.
  - e. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

- a. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles.
  - b. Dampen cleaned concrete surfaces and apply bonding agent.
  - c. Place patching mortar before bonding agent has dried.
  - d. Compact patching mortar and finish to match adjacent concrete.
  - e. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Inspections:
1. Steel reinforcement placement.
  2. Verification of use of required design mixture.
  3. Concrete placement, including conveying and depositing.
- C. Measure floor and slab flatness and levelness within 48 hours of finishing.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.
  - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
  - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.

12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION

# STRUCTURAL STEEL FRAMING

## 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. Structural steel.
2. Grout.

- B. Related Sections:

1. Section 014000 "Quality Requirements" for independent testing agency procedures and administrative requirements.
2. Section 055000 "Metal Fabrications".

### 1.3 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

### 1.4 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.

### 1.5 QUALITY ASSURANCE



- A. Comply with applicable provisions of the following specifications and documents:
  - 1. AISC 303.
  - 2. AISC 341 and AISC 341s1.
  - 3. AISC 360.
  - 4. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
  - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
  - 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
  - 2. Clean and relubricate bolts and nuts that become dry or rusty before use.
  - 3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

## 1.7 COORDINATION

- A. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

## PART 2 - PRODUCTS

### 2.1 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A 992/A 992M.
- B. Channels, Angles, M, S-Shapes: ASTM A 36/A 36M.
- C. Plate and Bar: ASTM A 36/A 36M.
- D. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.

1. Weight Class: Standard, unless noted otherwise on Drawings.
2. Black except where indicated to be galvanized.

E. Welding Electrodes: Comply with AWS requirements.

## 2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, (ASTM A 563M, Class 8S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers; all with plain finish.
- B. Unheaded Anchor Rods: ASTM F 1554, Grade 36
  1. Configuration: Straight.
  2. Nuts: ASTM A 563 (ASTM A 563M) heavy.
  3. Plate Washers: ASTM A 36/A 36M carbon steel.
  4. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
  5. Finish: Plain.

## 2.3 PRIMER

- A. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
- C. Galvanizing Repair Paint: ASTM A 780.

## 2.4 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## 2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.
  - 1. Camber structural-steel members where indicated.
  - 2. Fabricate beams with rolling camber up.
  - 3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
  - 4. Mark and match-mark materials for field assembly.
  - 5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
  - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 3, "Power Tool Cleaning."
- F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
  - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
  - 2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
  - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

## 2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened.

- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

## 2.7 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
  - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
  - 2. Surfaces to be field welded.
  - 3. Surfaces to be high-strength bolted with slip-critical connections.
  - 4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
  - 5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
  - 1. SSPC-SP 2, "Hand Tool Cleaning."
  - 2. SSPC-SP 3, "Power Tool Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
  - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

## 2.8 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.
  - 1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.
  - 2. Galvanize lintels, shelf angles and all structural steel exposed to weathers attached to structural-steel frame and located in exterior walls.

## 2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.
  - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.
- C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
  - 1. Liquid Penetrant Inspection: ASTM E 165.
  - 2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
  - 3. Ultrasonic Inspection: ASTM E 164.
  - 4. Radiographic Inspection: ASTM E 94.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
  - 1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

#### 3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

- B. Base Bearing and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
  - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
  - 2. Weld plate washers to top of baseplate.
  - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
  - 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

### 3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  - 2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.

3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

### 3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.
- B. Bolted Connections: Bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.
  1. In addition to visual inspection, field welds will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
    - a. Liquid Penetrant Inspection: ASTM E 165.
    - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
    - c. Ultrasonic Inspection: ASTM E 164.
    - d. Radiographic Inspection: ASTM E 94.
- D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

### 3.6 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.
- B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

END OF SECTION

## COLD FORMED METAL FRAMING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Cold-formed metal framing for the following applications:
  - 1. Load-bearing wall framing.
  - 2. Exterior non-load-bearing wall framing.
  - 3. Floor joist framing.
  - 4. Roof rafter framing.
  - 5. Exterior soffit framing.

#### 1.2 RELATED SECTIONS

- A. Section 05 50 00 - Metal Fabrications: for masonry shelf angles and connections.
- B. Section - 09 23 00 - Gypsum Board Shaft Wall Assemblies: for interior non-load-bearing, metal-stud-framed, shaft-wall assemblies.
- C. Section 09 22 16.13 - 'Non-Structural Metal Framing' for interior non-load-bearing, metal-stud framing and ceiling-suspension assemblies.

#### 1.3 REFERENCES

- A. American Concrete Institute (ACI) 318 - Building Code Requirements for Structural Concrete.
- B. American Iron and Steel Institute (AISI) S200 - North American Standard for Cold-Formed Steel Framing - General Provisions.
- C. ASTM International (ASTM):
  - 1. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - 2. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 3. ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
  - 4. ASTM A 1003/A 1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
  - 5. ASTM C 150 - Statistical Calibration of ASTM C150 Bogue-Derived Phase Limits to Directly Determined Phases by Quantitative X-Ray Powder Diffraction
  - 6. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout.
  - 7. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
  - 8. ASTM C 1107/C 1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
  - 9. ASTM C 1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
  - 10. ASTM E 488 - Standard Test Methods for Strength of Anchors in Concrete Elements.
  - 11. ASTM E 1190 - Standard Test Methods for Strength of Power-Actuated Fasteners Installed in Structural Members.
  - 12. ASTM F 1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
- D. ICC-ES AC70 - Acceptance Criteria for Fasteners Power-driven into Concrete, Steel and



Masonry Elements.

E. SSPC - Structural Steel Painting Council.

#### 1.4 ACTION SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings:
  - 1. Include spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
  - 2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
- D. Delegated-Design Submittal: For cold-formed steel framing structural design.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For third party manufacturing facility testing agency.
- B. Welding Certificates: For each welder.
- C. Manufacturing Facility Inspection Certification: For each stud and track framing product, submit current certification that manufacturing facility has been inspected by a 3rd party International Accreditation Service (IAS) accredited agency.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.
- C. Manufacturing Facility Inspection Agency Qualifications: Qualified according to IAS Accreditation Criteria for Inspection Agencies (AC98), and has demonstrated compliance with ISO/IEC Standard 17020:2012, Conformity assessment - Requirements for the operation of various types of bodies performing inspection for testing indicated.
- D. Product Tests: Mill certificates or data from a qualified independent testing agency, or in-house testing with calibrated test equipment, indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- E. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
- F. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship is approved by Architect.
  - 3. Rebuild mock-up area as required to produce acceptable work.

## 1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.
- C. Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

## 1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.10 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers (or equivalent): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Dietrich Metal framing: a Worthington Industries Company
  - 2. MarinoWARE
  - 3. Nuconsteel: a Nucor Company
  - 4. Steel Network, Inc. (The).
  - 5. Super Stud Building Products, Inc.
  - 6. United Steel Manufacturing
- B. Web: <http://buysuperstud.com>.
- C. Substitutions: Not permitted.
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 - Quality Requirements "Quality Requirements," to design cold-formed steel framing.
- B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.

1. Design Loads: As indicated on Structural Drawings, and in accordance with Applicable Building Code.
2. Deflection Limits: For deflection calculations, wind pressures may be reduced in accordance with International Building Code (IBC) table 1604.3, footnote f. Design framing systems to withstand design loads without deflections greater than the following:
  - a. Exterior Load-Bearing and Exterior Non-Load-Bearing Wall Framing: Horizontal deflection depending upon type of cladding supported:
    - 1) Brick or Stone or Masonry Veneer:  $l/600$  of wall height.
    - 2) Stucco or Portland Cement Plaster or Tile or Thin Brick:  $1/360$  of wall height.
    - 3) Exterior Insulation and Finish System (EIFS):  $1/240$  of the wall height.
    - 4) Aluminum composite metal (ACM) or similar metal panel systems:  $1/180$  of the wall height.
  - b. Interior Load-Bearing Wall Framing: Horizontal deflection of  $1/240$  of the wall height under a horizontal load of 5 lbf/sf (24 kilogram-force/square meter).
  - c. Floor Joist Framing: Vertical deflection of  $1/360$  for live loads and  $l/240$  for total loads of the span.
  - d. Roof Rafter Framing: Vertical deflection of  $1/240$  of the horizontally projected span for live loads.
3. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 degree F (49 degree C).
4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live and snow load deflection of primary building structure as follows:
  - a. Upward and downward movement of  $1/2$  inch (13 mm).
5. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

### 2.3 COLD-FORMED STEEL FRAMING, GENERAL

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
  1. Grade: for 33 and 43 mil thickness: ST33H. For 54 mil and greater thickness: ST50H.
  2. Coating: ASTM A653 G60 standard. Heavier galvanizing is permitted.
- C. Steel Sheet for Vertical Deflection Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
  1. Grade: 50.
  2. Coating: G90.

### 2.4 LOAD-BEARING AND EXTERIOR NON-LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm) (33 mil, structural 20 gauge).
  2. Flange Width: 1-5/8 inches (41 mm).

- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows:
  1. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm).
  2. Flange Width: 1-5/8 inches (41 mm).
- C. Steel Box or Back-to-Back or L-Headers: Manufacturer's standard C-shapes or L-shapes used to form header beams, of web depths indicated, unpunched, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm).
  2. Flange Width: 1-5/8 inches (41 mm) minimum for C-shapes, and top flange width minimum 2 inches (51 mm) for L-shapes.
  3. Holes in header members greater than 1/4 inch (6 mm) are not permitted without an approved design.
- D. Vertical Deflection Clips: Manufacturer's standard bypass and head-of-wall clips, capable of accommodating 1.5 inches (38 mm) upward and downward vertical displacement of primary structure (with total vertical movement of 3 inches (76 mm)) through positive mechanical attachment to stud web. Minimum deflection clip thickness: 97 mil (2.46 mm) (12 gauge).
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Super Stud Building Products, Inc.; or comparable product by one of the following:
    - a. Super Stud Building Products, Inc.
    - b. Simpson Strong-Tie, Inc.
    - c. The Steel Network.
- E. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal loads and transfer them to the primary structure, and as follows:
  1. Minimum Base-Metal Thickness: 0.0428 inch (1.1 mm) (43 mil, 18 gauge).
  2. Flange Width: 1 inch (25 mm) plus the design gap, or 1.5 inches (38 mm), whichever is greater.
- F. Drift Clips (where indicated on drawings): Manufacturer's standard bypass or head clips, capable of isolating wall stud from upward and downward vertical displacement and lateral drift of primary structure through positive mechanical attachment to stud web and structure.

## 2.5 FLOOR JOIST FRAMING

- A. Steel Joists: Manufacturer's standard C-shaped steel joists, of web depths indicated, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: 0.0428 inch (1.1 mm) (43 mil, 18 gauge).
  2. Flange Width: 1-5/8 inches (41 mm) minimum.
- B. Steel Joist Track: Manufacturer's standard U-shaped steel joist track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: Matching steel joists.
  2. Flange Width: 1-1/4 inches (32 mm) minimum.

## 2.6 ROOF RAFTER FRAMING

- A. Steel Rafters: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm) (33 mil, structural 20 gauge).
  2. Flange Width: 1-5/8 inches (41 mm) minimum.

## 2.7 EXTERIOR SOFFIT FRAMING

- A. Exterior Soffit Framing: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:
  - 1. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm) (33 mil, structural 20 gauge).
  - 2. Flange Width: 1-5/8 inches (41 mm) minimum.

## 2.8 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
  - 1. Supplementary framing.
  - 2. Bracing, bridging, and solid blocking.
  - 3. Web stiffeners.
  - 4. Anchor clips.
  - 5. End clips.
  - 6. Foundation clips.
  - 7. Gusset plates.
  - 8. Stud kickers and knee braces.
  - 9. Joist hangers and end closures.
  - 10. Hole reinforcing plates.
  - 11. Backer plates.

## 2.9 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.
- B. Anchor Bolts: ASTM F 1554, Grade 36 minimum, threaded carbon-steel bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated.
- C. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.
- D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
- E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
  - 1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

## 2.10 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint must comply with one of the following: SSPC-Paint 20, MIL-P-21035B, or ASTM A 780.
- B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

- C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, Portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, with fluid consistency and 30-minute working time.
- D. Shims: Load bearing, high-density multi-monomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.
- E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

## 2.11 FABRICATION

- A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to code-referenced American Iron and Steel Institute (AISI) specifications and standards, manufacturer's written instructions, and requirements in this Section.
  - 1. Fabricate framing assemblies using jigs or templates.
  - 2. Cut framing members by sawing or shearing; do not torch cut.
  - 3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
    - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by no fewer than three exposed screw threads.
  - 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
  - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
  - 2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch (3 mm).

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing 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. Before sprayed fire-resistive materials are applied, attach continuous angles, Z-Furring, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.
- B. After applying sprayed fire-resistive materials, remove only as much of these materials as

needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

- C. Install load bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch (6 mm) to ensure a uniform bearing surface on supporting concrete or masonry construction.
- D. Install sealer gaskets at the underside of wall bottom track or rim track at the top of foundation wall or slab at stud or joist locations.

### 3.3 INSTALLATION, GENERAL

- A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed steel framing according to ASTM C1007 and to manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
  - 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
  - 1. Cut framing members by sawing or shearing; do not torch cut.
  - 2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
    - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    - b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.
- H. Install insulation, specified in Section 07 21 26 - Blown Insulation " Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.
- J. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
  - 1. Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of

sheathing or other finishing materials.

### 3.4 LOAD-BEARING WALL INSTALLATION

- A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and anchor at spacings to match stud spacing, or as shown on Shop Drawings.
- B. Squarely seat studs against top and bottom tracks with gap not exceeding 1/8 inch between the end of wall framing member and the web of track. Fasten both flanges of studs to top and bottom tracks. Space studs at maximum 16 inches (406 mm) on center, or as indicated on approved shop drawings.
- C. Set studs plumb, except as needed or required for nonplumb walls or curved surfaces and similar configurations.
- D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer loads.
- E. Align floor and roof framing over studs according to AISI S200, Section C1. Where framing cannot be aligned, continuously reinforce track to transfer loads.
- F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.
- G. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.
  - 1. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings. Fasten jamb members together to uniformly distribute loads.
  - 2. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
- H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing. If type of supplementary support is not indicated, comply with stud manufacturer's written recommendations and industry standards in each case, considering weight or load resulting from item supported.
- I. Install horizontal bridging in stud system, spaced vertically as indicated on Shop Drawings. Fasten at each stud intersection.
  - 1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of two screws into each flange of the clip angle for framing members up to 8 inches deep.
  - 2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
- J. Where required for overall structural shear wall lateral bracing, Install steel sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.
- K. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and



stable wall-framing system.

### 3.5 NON-LOAD-BEARING WALL INSTALLATION

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- B. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Space studs at maximum 24 inches (610 mm) on center, or as indicated on approved shop drawings.
- C. Set studs plumb, except as needed or required for nonplumb walls or curved surfaces.
- D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
  - 1. Install single deep-leg deflection tracks and anchor to building structure.
  - 2. Connect vertical deflection clips to bypassing and infill studs and anchor to building structure.
  - 3. Connect drift clips to cold-formed metal framing and anchor to building structure.
- E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings. Fasten at each stud intersection.
  - 1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 24 inches (610 mm) of top single deflection track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness matching studs, secured to stud webs or flanges. At bridging line, install solid blocking at each end of bridging straps, and at a maximum spacing of 120 inches (3048 mm) on center.
  - 2. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
  - 3. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges. At bridging line, install solid blocking at each end of bridging straps, and at a maximum spacing of 120 inches (3048 mm) on center.
- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

### 3.6 JOIST INSTALLATION

- A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.
- B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track, or use end stiffeners for joist/track connection where attachment to one flange is not accessible.
  - 1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm).
  - 2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.
- C. Space joists not more than 2 inches (51 mm) from abutting walls. Joist spacing shall be as indicated on approved shop drawings, but not more than 24 inches.
- D. Frame openings with built-up joist headers consisting of joist and joist track, or another combination of connected joists if indicated.

- E. At bearing walls and interior supports, provide web stiffeners and solid blocking as required or indicated on Shop Drawings, to transfer both vertical and lateral forces from walls above.
- F. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows:
  - 1. Bridging: Joist-track or proprietary solid blocking of width and thickness indicated, secured to joist webs.
  - 2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track or proprietary solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs. At bridging line, install solid blocking at each end of bridging straps, and at a maximum spacing of 120 inches on center.
- G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.
- H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

### 3.7 FIELD QUALITY CONTROL

- A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Remove and replace work where test results indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

### 3.8 REPAIRS AND PROTECTION

- I. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- J. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

## JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section: following applications:
  - 1. Interior and exterior joints in vertical surfaces and horizontal nontraffic surfaces.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

#### 1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: 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.
- C. Preconstruction field test reports.
- D. Compatibility and adhesion test reports.
- E. Product test reports.

#### 1.4 QUALITY ASSURANCE

- A. Preconstruction Compatibility and Adhesion Testing: Submit samples of materials that will contact or affect joint sealants to joint-sealant manufacturers for testing according to ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.

#### 1.5 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: Ten years from date of Substantial Completion.

## 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.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

### 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. Colors of Exposed Joint Sealants: 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 liquid-applied 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 nonstaining 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 Neutral Curing Non-Staining Silicone Sealant:

1. Products:
  - a. Dow Corning; 795
  - b. Pecora Corporation: 895NST Silicone
  - c. Or equal
2. Type and Grade: S (single component) and NS (non sag).
3. Class: 50.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: NT, M, A and O.

F. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant:

1. Products:
  - a. Dow Corning; 795.
  - b. Pecora Corporation: 898NST Silicone Sealant
  - c. Or equal.
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

## 2.4 ACOUSTICAL JOINT SEALANTS

A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products:
  - a. Pecora Corporation; AIS-919 Acoustical and Insulation Sealant or AC-20 FTR Acoustical and Insulation Sealant.
  - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
  - c. Or equal.

## 2.5 PREFORMED JOINT SEALANTS

A. Preformed Silicone-Sealant System: Manufacturer's standard system consisting of precured low-modulus silicone extrusion, in sizes to fit joint widths indicated, combined with a neutral-curing silicone sealant for bonding extrusions to substrates.

1. Products:
  - a. Dow Corning Corporation; 123 Silicone Seal.
  - b. GE Silicones; UltraSpan US 1100.
  - c. Pecora Corporation; Sil-Span.
  - d. Tremco; Spectrem Ez Seal.
  - e. Or equal.

B. Preformed Foam Sealant: Manufacturer's standard mildew-resistant, nonmigratory, nonstaining, preformed, precompressed, open-cell foam sealant that is manufactured from high-density urethane foam impregnated with a nondrying, water-repellent agent.

1. Products:

- a. EMSEAL Joint Systems, Ltd.; Emseal25V.
- b. illbruck Sealant Systems, Inc.; Wilseal 600.
- c. Polytite Manufacturing Corporation; Polytite B.
- d. Polytite Manufacturing Corporation; Polytite Standard.
- e. Sandell Manufacturi11g Co., Inc.; Polyseal.
- f. Density: Manufacturer's standard 5.5 to 6.5 lb/cu. ft. (90 to 110 kg/cu. m).

## 2.6 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; 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 C (closed-cell material with a surface skin), 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.

## 2.7 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.

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: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### DO NOT INSTALL BELOW 40° F

#### 3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants.
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
    - a. 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.
  - 2. Remove laitance and form-release agents from concrete.
    - a. 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.

#### 3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications 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 Non sag 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. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Installation of Preformed Silicone-Sealant System: Comply with manufacturer's written instructions.
- H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, producing seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in compliance with sealant manufacturer's written instructions.
- I. 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.

END OF SECTION



# PRE-ENGINEERED STEEL TACTICAL TRAINING TOWER

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

- A. This Section includes the following:

- 1. Tactical Training Tower.
- 2. Design Requirements.

### 1.3 REFERENCES

- 1. American Iron and Steel Institute (AISI): "Specification for the Design of Cold-Formed Steel Structural Members."
- 2. American Institute of Steel Construction (AISC): "Steel Construction Manual", Allowable Stress or Load and Resistance Factor Design.
- 3. American Society for Testing and Materials (ASTM) Publications:
  - a. ASTM A36 "Standard Specification for Carbon Structural Steel"
  - b. ASTM A123 "Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products"
  - c. ASTM A653 "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process"
  - d. ASTM A924 "Standard Specification for General Requirements for Steel Sheet, Metallic- Coated by the Hot-Dip Process"
  - e. ASTM A992 "Standard Specification for Structural Steel Shapes"
- 4. National Fire Protection Association (NFPA):
  - a. NFPA 1402 – "Standard On Facilities For Fire Training And Associated Props"
  - b. NFPA 1403 – "Standard On Live Fire Training Evolutions"
- 5. International Code Council (ICC): International Building Code

## 1.4 DEFINITIONS

- A. Building Width: Measured from outside to outside of sidewall girts. Typically edge to edge of concrete.
- B. Building Length: Measured from outside to outside of end wall girts. Typically edge to edge of concrete
- C. Building Line: Outside face of steel/girt.
- D. Building Eave Height: Measured from the top of the eave member at the outside of the sidewall girt line to the bottom of the sidewall column base plate or to finished floor if columns are on grout or recessed below finished floor.
- E. Bay Spacing: Measured from centerline to centerline of primary frames for interior bays and from centerline of the first interior frame to outside of end wall girts for end bays.

## 1.5 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## PART 2 - DESCRIPTION

### 2.1 PURPOSE

- A. This structure will be used to provide safe, accurate, realistic simulations for law enforcement and military personnel to practice and learn tactical procedures necessary to achieve mission objectives and save lives.

### 2.2 GENERAL

- A. The tower shall utilize a structural steel frame system and curtain wall design. Structural framing systems are considered the norm for high-rise and commercial structures. The curtain wall/exterior wall panel design produces an ideal buffer or protection between the main structural frame of our building and any exterior elements, so that if an exterior wall panel is damaged, no structural damage is likely to occur. This wall panel system also creates a flat surface ideal for ladder or rappelling anywhere on the tower to simulate actual street conditions.

### 2.3 STRUCTURAL INTEGRITY

- A. The wind loads, deck and the roof loads stated herein represent the standard criteria. Increased loadings, as may be dictated by local jurisdictions, must be accommodated. The primary structural system shall utilize hot-rolled structural steel column and beam frames sized to meet and exceed the loads as indicated. This training simulator shall be considered a nonbuilding structure for both code compliance and load interpretation. The primary and secondary structural system

shall also meet and exceed the loads as indicated while maintaining a maximum deflection of L/240.

## 2.4 CODE COMPLIANCE

- A. The training structure/tower's primary structural and seismic design shall be in accordance with the currently adopted New Jersey building codes. Due to the unique nature of the intended use of these training structures/towers; handrail extensions, guard openings, riser openings, means of egress, fire wall requirements as well as other construction issues, are not expected to satisfy the criteria of buildings intended to accommodate public occupancy. This may require a building code variance in some locations; however, this simulator shall meet applicable building codes and NFPA 1402 standards. It is the responsibility of the owner to obtain such variance if required. The training structure/tower, Occupancy Group – U (Utility & Miscellaneous), must comply with all building codes listed on this plans set, including but not limited to 2021 International Building Code (New Jersey Edition) and 2020 National Electric Code.

## 2.5 MATERIALS

- A. All materials shall be new and shall conform to applicable ASTM specifications. All structural or nonstructural materials used, 10 gauge or less in thickness, whether exposed or not to the elements shall be hot dipped galvanized. When any mention of galvanized is noted within these specifications, it shall be implied to mean hot dipped galvanized. Any exposed material which is not galvanized, shall be given one coat of shop paint.

## 2.6 FASTENERS

- A. All fasteners utilized with galvanized steel panels not exposed to the elements shall be electro-galvanized. All exterior fasteners shall be furnished with a contained EPDM washer under the head for sealing. Structural columns and beams shall be field bolted with (A325) 5/8" diameter electro-galvanized bolts or larger. Anchor bolts shall be furnished by the concrete contractor, unpainted and of the size specified on the anchor bolt plan.

## 2.7 WEATHER SEALING

- A. All joints in weather tight areas are to be sealed with tape caulk or foam closures as specified on the building plan. Because of the intended use water tightness of simulators is not required or assured.

## 2.8 ROOF SYSTEMS

- A. Roofs shall be decked with 30" or 36" wide, 18 ga. unpainted galvanized 18 gage steel deck per ASTM A-653, class G60 with recessed fasteners and shall meet the stated design load. Panels must have 6" on center cell spacing with an actual 4 1/4" flats with an actual 1 3/4" wide recesses and a maximum of 1 1/2" deep recesses. Panels must be roll formed.

## 2.9 EXTERIOR WALL SYSTEM

- A. Wall panel/curtain wall system shall provide for a concentrated rappelling/ladder load of 890 pounds while the primary structural framing supporting this wall system shall provide for a concentrated point load of 2300 pounds. Rake trims, parapet rake trims, and window opening sill trim corners shall be beveled to prevent rope chafing, personal injury, or equipment damage.

## 2.10 WALL PANELS

- A. The exterior wall panels shall be essentially flat to allow for safe laddering and rappelling anywhere on the simulator without the requirement of additional exterior surface plates to form a flat surface. The exterior wall panels shall be of 18 ga. hot-dipped galvanized steel per ASTM A-924, class G-90. Panels shall have nominal 4  $\frac{3}{4}$ " flats with a maximum 1  $\frac{1}{8}$ " wide recesses and shall be set in the horizontal plane. Since panels are set in the horizontal plane, sealants are not required to make this structure weather tight (sealants in extreme temperature environments will breakdown prematurely). Panels must be brake formed to provide a maximum  $\frac{1}{8}$ " inside radius. All end joints of all panels must be backed by a splice panel, which extends a minimum of 12" either side of the joint (24" total). Exterior walls panels shall be painted from the customer's choice of the manufacturer's available colors.
- B. The interior wall panels shall be corrugated for added strength and durability. The interior wall panels consist of hot-dipped galvanized steel per ASTM A-924. The interior wall panels shall have a  $\frac{3}{4}$ " deep maximum corrugation at 3  $\frac{1}{2}$ " on center and shall be set in the vertical plane. Interior wall panels shall be painted white.
- C. Painted wall panels (interior and exterior) shall be manufactured from coil coated steel meeting ASTM A-924, hot-dipped galvanized, and painted with a paint system on both sides of the panel. The base coat shall be a 0.2 to 0.25 mil coat of a polyurethane primer. The topcoat shall be a 0.7 to 0.8 mil coat of silicon protected polyester on the face side. The paint, on both sides of the panel, is to be baked on. The finished surfaces are to have a light wax coating applied after painting.

## 2.11 SECONDARY WALL FRAMING

- A. Wall framing shall be of conventional steel stud construction. Studs are to run vertically to represent common stud construction and be spaced at no more than 24 inches on center. Stud size and gage shall be determined by the design engineer, and shall accommodate all design criteria stated in other sections of this specification. All rough openings shall be framed in the conventional manner and provide fastening surfaces for all interior and exterior finishes and trims as provided with the building system.

## 2.12 SECONDARY ROOF FRAMING

- A. Roof framing shall be of conventional steel joist construction, Joists are to be spaced at no more than 24 inches on center and shall have a maximum span length of 14 ft. All rough openings shall be framed in the conventional manner and provide fastening surfaces for all floor and roof decks as provided with the building system.

## 2.13 WINDOW & DOOR LOCATIONS

- A. Window and door locations indicated on the drawings are suggested only. All such openings are to be field cut and with the exception of the stair wall, may be located according to preference.

## 2.14 WINDOW SHUTTERS

- A. All window openings shall be provided with a swinging shutter of the proper size for the opening. Framed opening studs/jamb shall be 16 ga. galvanized steel. Shutters for all areas shall be made with double skins of 18 ga. galvanized steel per ASTM A-924. Shutters will be provided as a 1-3/8" thick factory welded hollow metal assembly with a minimum of 3 vertical interior hat channel stiffeners and a 14 ga. hinge reinforcement. The hinges shall be ball-bearing swaged mortise mount, 4" x 4" x 5/32" thick stainless steel, commercial grade, and provided with the appropriate quantities per shutter. A hollow metal welded assembly shall be used to prevent premature temperature warping that occurs on single panel/sheet shutters. Galvanized shutters are required to prevent premature rusting. All shutters shall be provided with a galvanized hold open and an operating lever latch with handles on both the inside and outside of the shutter. This latch shall have a padlocking handle and its case shall be 1/8" thick zinc plated steel with a black powder coated finish. See the plans for the swing of each individual shutter.

## 2.15 DOORS

- A. Doors for all areas shall be double skins of 18 ga. galvanized steel (total thickness), per ASTM A-924, and shall be an insulated hollow metal swing doors with 3 stainless steel ball-bearing hinges and full weather stripping. Framed opening studs/jamb shall be 16 ga. galvanized steel. This 1 3/4" thick door shall have a baked-on enamel finish and will include a lockset. Locksets shall meet ANSI A156.2 Series 4000 Grade 2 certifications and shall be keyed alike.

## 2.16 PARAPET WALLS

- A. Parapet walls, if utilized, shall be designed to resist a load of 50 lb/ft and a concentrated point load of 200 lbs in any direction at the top. This wall shall incorporate a minimum of 12 ga. galvanized studs at one foot on center with 18 gage wall panels installed on both sides. The parapet shall incorporate an integral draining system that provides for uniform drainage without the need for a concrete roof covering.

## 2.17 SECONDARY FLOOR SYSTEM

- A. Interior decks shall be six inch wide, unpainted 18 ga. slip resistant galvanized steel per ASTM A-924, A-60 with recessed fasteners and shall meet the stated design load. Panels must have nominal 5" flats with a maximum 1" wide by 1" deep recesses (maximum 1" recess is required to prevent potential injuries). Panels must be brake formed at 90 degrees and provide inside radiuses no greater than 1/8". All floor and roof decks shall be framed with light gage steel "C" joists spaced at no more than 24 inches on center and shall have a maximum span length of 14 ft. Joists size and gage shall be determined by the design engineer and shall

accommodate all design criteria stated in other sections of this specification. Concrete floor covering shall be specified for the entire floor system. Concrete floor covering is by others.

- B. The concrete shall be a minimum of 1 1/2" thick and shall be fiber reinforced. The concrete shall be pitched toward exterior walls and doors. Even with concrete covering, the steel floor panels, located below, shall alone be designed to carry all of the required loads and shall still be a minimum of 18 ga. thick galv. steel. Concrete is prone to damage in high temperature burn areas and in unheated structures due to freeze/thaw conditions, therefore concrete cannot be used to increase the design strength of the steel floor panels/decks in fire training structures.

## 2.18 STAIRS AND ACCESSORIES

- A. Stair widths shall be a minimum of 3'-0" wide. Stair rails shall include 36" high handrails and 42" high guardrails on both sides of the stairs. Handrail extensions are not to be utilized to prevent unnecessary hazards when training. Stringers shall be plate, treads and platforms are bar grate, and risers to be open. Bar grate treads (19W4 x 1" deep) are to be factory attached to the stringers and shall include a diamond plate nosing. Stairs shall be designed to resist a loading of 100 psf and a concentrated tread load of 300 lbs/4 sq.in.
- B. Handrails and guardrails shall consist of schedule 40 - 1 1/4" I.D. (1.66" O.D.) round pipe and the openings between guardrails shall not exceed 12" (minimum of three horizontal rails required). Handrails and guardrails shall be designed to resist a linear load of 50 plf and a concentrated point load of 200 lbs. Guardrails on stairs shall be an all factory welded assembly. Guardrails at openings shall have a factory welded post assembly to allow for the attachment of horizontal rails and shall be a minimum of 42" high.
- C. Stairs, stringers, handrails, guardrails, bar grating, ladders, and platform frames shall be hot-dipped galvanized per ASTM A-123. All welds, holes, cutting, and bending must be made prior to hot-dip galvanizing.

## 2.19 WT-4/COMMISSIONER FEATURES

### A. TOWER SECTION

1. 25'-0" x 30'-0" x 40'-0"
2. Flat Roof
3. Wind Load 115 MPH, Exposure C, Risk Category II
4. Roof Live Load 100 PSF
5. Interior Deck Live Load 100 PSF
6. Interior "U" shaped stairs to 4th floor
7. Interior fixed ships ladder, 4th floor to roof
8. 3' x 4' framed window openings with steel shutters (see drawings for Qty.)
9. 3' x 7' exterior steel door (see drawings for Qty.)
10. Parapet roof guard with exclusive roof drainage to the exterior of the building with chained openings

## B. RESIDENTIAL SECTION

1. 22'-7" x 30'-0" x 30'-0"
2. Flat Roof
3. Wind Load 115 MPH, Exposure C, Risk Category II
4. Roof live load 100 PSF
5. Floor live load 100 PSF
6. Interior straight stair to third floor
7. 3' x 4' framed window openings, with steel shutters (see drawings for Qty.)
8. 3' x 7' interior steel door (see drawings for Qty.)
9. 3' x 7' exterior steel doors (see drawings for Qty.)
10. Parapet roof guard with exclusive roof drainage to the exterior of the building with chained openings

## 2.20 ADDITIONAL FEATURES TO BE INCLUDED

### A. Cantilevered Balcony

1. Cantilevered balcony shall be constructed of prime painted structural tube and hot-dipped galvanized joists and bar grate deck.
2. Balcony to be approximately 4'-0" wide x 23'-10" long.
3. Balcony to be located on 2<sup>nd</sup> floor.
4. Balcony shall be cantilevered, without any support columns.
5. Shall include one door to the interior.
6. Perimeter railing shall be 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe.

### B. Recessed/Inset Balcony

1. Recessed/inset balcony on the 2<sup>nd</sup> floor(s) with 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe perimeter railings and access door to interior.

### C. Roof Hatch 2'-6" x 4'-6"

- D. Provide a Bilco 2'-6" x 4'-6" roof hatch in the tower roof. The hatch shall be equipped with compression spring operators, positive latching mechanism, automatic hold open arm, and shall be galvanized steel with prime paint covering.

### E. Forged Swivel Rappelling Anchor

1. (9) Rappelling anchors shall be rated for an ultimate load of 10,000 lbs and working load of 1,000 lbs (exceeds OSHA load requirement 29 CFR 1926.502(d)(15) and meets NFPA 1402 standard 11.2.1).
2. The anchor housing shall be galvanized aircraft quality alloy and capable of a 360 degree swivel and 180 degree pivot.
3. Each anchor shall be 200% proof-load tested.

### F. Riser System

1. Brass Siamese fire department connection (4" x 2 ½" x 2 ½"; NST thread) located at the exterior of the tower, with galv. interior 4" diameter riser (34' high).

2. Include a connection (2.5" NST thread) on the towers interior at each deck level and a connection for future sprinklers at each floor.

#### G. Bilco Floor Door 3'-0" x 3'-0"

1. Provide a Bilco 3'-0" x 3'-0" floor door in the 2<sup>nd</sup> and 3<sup>rd</sup> floors.
2. The door shall be rated for 300 psf live load with a ¼" thick diamond plate cover.
3. It shall be hot-dipped galvanized and equipped with both a compression spring lifting mechanism and a hold open arm. – (2) total floor door(s) required

#### H. Rappel Railing System

1. Three rail rappelling railing system (prime painted) is 42" high and consists of (3) 3" diameter pipes (schedule 80) set horizontally at 12" on center.
2. This system allows the rope to run from the rappelling ring tie off point, at the deck, overtop to the trainee.
3. It is used to aid trainees in rappelling exercises by raising the rope up off of the roof deck to help with the initial roof edge situation. – (1) rappelling railing system(s) required

#### I. Cantilevered Balcony

1. Cantilevered balcony shall be constructed of prime painted structural tube and hot-dipped galvanized bar grate deck and joists.
2. Balcony to be approximately 4'-0" wide x 24'-4" long. *Balcony to be located on the tower 3<sup>rd</sup> floor.*
3. Balcony shall be totally cantilevered, no support columns may be used. Shall include *one* door to the interior.
4. Perimeter railing shall be 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe.

### 2.21 DESIGN, DRAWINGS & DATA

- A. The supplier shall be responsible for providing the design exclusive of the foundation. The supplier shall submit structural building design calculations, shop drawings, 2 sets of drawings detailing anchor bolt loadings and locations as well as general plans, elevations, structure sections and related details signed and sealed by a New Jersey structural engineer for review and approval. The supplier will submit 2 sets of assembly (steel erection) drawings and 2 sets of assembly manuals concurrent with the shipment of materials. Building parts shall each be identified by individual part numbers clearly written on or attached to the part. Part numbers in the assembly manual shall coincide with the suppliers shop drawings.

### 2.22 DELIVERY, INSPECTION & STORAGE

- A. All components, assembly manual, and accessories shall arrive via flat bed trailer. Materials for the burn room may arrive separately via common carrier. Inventory of delivered materials must be taken during delivery or shortly thereafter. Damage to, or shortages noted during delivery must be noted on the freight bill and reported at once to the manufacturer. All claims for damages or shortages must be reported



within 48 hours of delivery Security and materials protection in storage is the responsibility of the receiving party. Materials packaged in small cartons must be stored in a secured area to prevent theft and/or damage by the elements. Materials stored outside must be stacked on pallets and covered with suitable waterproof coverings (not plastic).

- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 2.23 WARRANTY

### A. General Warranty

- 1. The tower supplier shall certify that the training tower and its components have been designed to meet the contract specifications.
- 2. The tower supplier shall warrant the materials and components to be free of fabricating defects.
- 3. Any pre-engineered structure will require the erector to furnish a certain amount of field fabrication and / or modifications as stated in the manufacturer's written instructions/assembly manual.
- 4. Sections of work requiring field cutting or drilling are indicated on the drawings or in the assembly manual.
- 5. Other field modifications may be necessitated by site conditions beyond the manufacturer's control. The foregoing are not subject to warranty.

### B. Paint Warranty

- 1. The paint system shall provide a 30/25 year limited warranty on paint finish, which includes chalking and breakdown of film integrity.

### C. Structure Warranty

- 1. A 5-year limited warranty shall be provided on the structure itself.

## 2.24 SUBMITTALS

### A. General: Submit the following in accordance with the Conditions of the Contract and Division 1 Specification Sections:

- 1. Submit under provisions of Section 013000 - Administrative Requirements.
- 2. Design Data: Provide detailed shop drawings, structural design criteria and calculations prepared by a licensed New Jersey structural engineer. Shop drawings shall demonstrate compliance with the design criteria detailed on Sheet S-1.
- 3. Certification: Manufacturer certification that the building conforms to the contract documents and manufacturer's standard design procedures.
- 4. Shop Drawings: Show building layout, primary and secondary framing

member sizes and locations, cross-sections, and product and connection details.

5. Product Data: Information on manufactured products to be incorporated into the project.
6. Samples of the manufacturer's standard color charts covering both the siding colors and the door and window trim colors shall be furnished to the owner.
7. Verification Samples: For each finish product specified, two samples, minimum size 6 inches square, representing actual product, color, and patterns.
8. Certificates: Welder certifications.

## B. QUALITY ASSURANCE

1. Manufacturer Qualifications: The manufacturer shall have a minimum of 10 years successful experience in designing and manufacturing Training Towers of similar size and scope as project requires.
2. Member of the Metal Building Manufacturer's Association (MBMA).
3. Engineering Professional Qualifications: The engineering professional who designs the structure for the project must be registered in the State of New Jersey.

## 2.25 SUPPLIERS/SYSTEMS

- A. Acceptable Suppliers/Systems: Tactical Training Systems, 314 Wilburn Road, Sun Prairie, WI, 53590, Phone: 800/929-3726 or 608/327-4100, Fax: 866/639-7012 or 608/834-1843, E-mail: [info@tacticaltrainingsystems.com](mailto:info@tacticaltrainingsystems.com), Website: [www.tacticaltrainingsystems.com](http://www.tacticaltrainingsystems.com) or approved equal.
- B. Alternate Suppliers/Systems: Any systems/materials not explicitly meeting the specifications stated herein, shall be pre-approved fourteen days prior to the bid due date. For all systems/materials in question, the supplier/contractor shall provide samples, written specifications, warranties, full set of drawings, and MSDS. An itemized list must be provided that specifically references each item that deviates from this specification. In any case, all performance and warranty criteria stated herein must be met without exception.

## PART 3 - EXECUTION

- 3.1 GENERAL: Comply with the manufacturers recommendations for preparation and storage of the tower components.
- 3.2 Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper and or timely completion.
  1. Verify foundations are properly installed, to correct dimensions and within acceptable tolerances.

2. Verify location of covered or built-in work.
3. Do not proceed until unsatisfactory conditions have been corrected.

### 3.3 PREPARATION

- A. Framing Erection: Erect framing in compliance with AIS Specification and the latest edition of the MBMA metal building systems manual.
- B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing. Locate braced bays as required by manufacturer.

3.4 EXAMINATION: Verify that concrete work has cured a minimum of 14 days. Verify that anchor bolts are at the proper spacing and protrude the proper amount above the concrete. Report any variances to the owner's representative prior to proceeding with erection.

3.4 ERECTION: Follow the manufacturer's written instructions/assembly manual and details supplied by the manufacturer. Report any discrepancies to the manufacturer prior to proceeding.

- A. Do not field cut or alter structural members without written approval.
- B. After erection, prime welds, abrasions, and surfaces not primed with primer used in shop painting.

### 3.5 INSTALLATION

- A. Install in compliance with manufacturer's instructions and approved submittals.
  1. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.
  2. Fasten cladding system to structural supports, aligned level and plumb.
  3. Locate end laps over supports. End lap panels according to manufacturer's recommendations. Place side laps over adjacent panel and mechanically seam or stitch fastener per erection guidelines.
  4. Provide expansion joints where indicated.
  5. Use concealed fasteners.
  6. Install sealant and gaskets to prevent weather penetration.
  7. Install system free of rattles, noise due to thermal movement, and wind whistles.
  8. Install door frames, service doors, overhead doors, window and glass, and gutter system in compliance with manufacturer's instructions.
  9. Seal wall and roof accessories watertight and weather tight with sealant in

compliance with building manufacturer's standard procedures.

10. Rigidly support and secure gutters and downspouts. Joint lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.

### 3.5 FIELD QUALITY CONTROL

A. Defective Work: Materials, components and assemblies not complying with the manufacturer's installation recommendations shall be repaired or replaced, at the option of the manufacturer.

#### B. INSPECTION:

1. Verify that all bolted connections are tight, self-drilling screws with integral washers are seated snugly without washer distortion and rivets have not pulled through the attached materials. Replace improperly set or damaged fasteners.
2. Inspect all panels, trims and accessories for proper installation and fit. Replace any item which is damaged, warped or distorted. Insure that all field mitered corners fit tightly and smoothly.

#### C. ADJUSTING

1. Adjust all shutters, swing doors and hatches so that they swing smoothly without binding and so that the appropriate hardware latches without forcing or slamming. Insure that all closures are adjusted so that they close smoothly.
2. Check all electrical and mechanical devices to make sure that they are working properly. Fans must be tested and demonstrated as working at all speeds.

#### D. CLEAN-UP

1. At the end of each day check the site and pick all debris and garbage. Insure that all materials are secured in a neat and orderly fashion.
2. Thoroughly clean the tower inside and out at the completion of the erection process to remove all debris, garbage, packing materials, metal shavings and dirt.

END OF SECTION

## GENERAL ELECTRICAL PROVISIONS

### PART 1 – GENERAL

#### 1.1 REFERENCE TO CONDITIONS OF THE CONTRACT

- A. The Conditions of the Contract (General, Supplementary and other Conditions) and Division 1 - General Requirements, apply to the work specified in this Division. Unless the specifications contain statements which are more definitive or more restrictive than those contained in the Conditions of the Contract, the specifications shall not be interpreted as waiving or overruling any requirements expressed in the Conditions of the Contract.
- B. No claim or additional compensation shall be entertained on behalf of or paid on account of failure to be informed of the above conditions and requirements.
- C. Should a bidder find discrepancies in or omissions from the drawings or specifications, or should he be in doubt as to their meaning, he should at once notify the Architect who shall send written instructions to bidders. If these are ignored by the Contractor, he shall be responsible for furnishing the proper or workable equipment as necessary.
- D. Before submitting a bid, bidders shall be held responsible to have visited the site of work, attend the Pre-Bid Meeting, and fully inform themselves as to existing conditions and limitations, including rules, rates and fringe benefits, travel pay, affiliation fees and transportation expense prevailing in the local labor market, and no allowance shall subsequently be made on behalf of the bidder by reason of any error on his part.
- E. Carefully examine the architectural, structural, heating, ventilating and air conditioning, kitchen, and plumbing drawings and any other contract documents. If any discrepancies occur between the drawings or between the drawings and the specifications, report such discrepancies to the Architect in writing and obtain written instructions as to the manner in which to proceed. No departures from the contract drawings shall be made without prior written approval of the Architect and Owner.
- F. Obtain any additional reference drawings and/or information required for installation prior to installing equipment.

#### 1.2 WORK INCLUDED

- A. Provide and install a complete and operating electrical installation in accordance with these specifications and accompanying contract drawings. This shall include required labor, material, apparatus and supervision.
- B. Without limiting or restricting the volume of work and solely for convenience, the work to be performed will, in general, comprise of the following:

1. Power and/or lighting panels.
2. Branch wiring.
3. Temporary service lighting and power.
4. Wiring of equipment furnished by others and final connections to same.
5. Grounding
6. Lighting fixtures, lamps and controls.
7. Fire alarm system.
8. Installation of equipment supplied by the Owner.

C. Items of labor, material, and equipment not specified in detail or shown on drawings, but incidental to or necessary for the complete installation and proper operation of the several branches of work and described herein, or reasonably implied in connection herewith, shall be furnished as if called for in detail by the specifications or drawings. This includes electrical work associated with mechanical and plumbing work whether indicated on electrical drawings or not.

### 1.3 WORK NOT INCLUDED

A. The following items of Electrical Construction are not included in this contract:

1. Certain low voltage wiring of mechanical equipment shall be done by the respective Contractor.
2. Certain motors and equipment, such as pumps, fans, etc., shall be provided by others, complete with motor and built-in or separate controllers as covered by such contracts. The extent of work required by this Contractor in connection with the provisions of this equipment is described hereinafter under "Electrical Powered Equipment."
3. Motors connected to driven equipment shall be set by respective Contractor furnishing same.
4. Certain line voltage electrical apparatus such as switches, starters, controllers, transformers, etc., furnished by others shall be delivered to the curb by the Contractor furnishing the equipment, unless specifically noted otherwise. Unload and transport to installation location.
5. Electric heating equipment.

### 1.4 DEFINITIONS AND ABBREVIATIONS

A. Definitions

1. "Furnish" shall mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
2. "Install" shall be used to describe operations at project site including unloading, packing, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protection, cleaning, and similar operations, as applicable in each instance.

3. "Provide" shall mean furnish and install, complete and ready for intended use, as applicable in each instance.
4. "Directed" shall mean as directed by Owner prior to installation of equipment.
5. "Indicated" shall mean "indicated on Contract Drawings".
6. "Shown" shall mean "shown on Contract Drawings".
7. "Section" shall mean one of the Specification Sections.
8. "Division" shall mean one of the Specification Divisions.
9. "Article" shall mean one of the numbered paragraphs of the Specification Section.
10. "Work" or "Electrical Work" herein includes products, labor, equipment, tools, appliances, transportation and related items, directly or indirectly required to complete the specified and/or indicated electrical installation.
11. "Code" shall mean any and all regulations and requirements of regulatory bodies, public or private, having jurisdiction over the work involved.
12. "Product" used in Division 26 means material, equipment, machinery, and/or appliances directly or indirectly required to complete the specified and/or indicated Electrical Work.
13. "Standard Product" shall mean a manufactured product, illustrated and/or described in catalogs or brochures, which are in general distribution prior to the date of issue of construction documents for bidding. Products shall generally be identified by means of a specific catalog number and manufacturer's name.
14. "Wiring" shall mean fittings, conduits, wires, junction boxes, connections to equipment, splices, and other accessories required to complete the work.
15. Abbreviations and Symbols: See lists for both on drawings.
16. "This Contractor" shall mean the Contractor responsible for Division 16 work.
17. Contract Documents: drawings, specifications, bid forms, addendum, and change orders.
18. Whenever the phrases "approved by the Architect or Owner," "approved equivalent," or "equivalent to" appear in these specifications, they shall be interpreted as meaning "as recommended by the Architect and approved by the Authority."

B. Reference to the following codes and standards shall mean:

<u>Reference</u>	<u>Definition</u>
NEC	National Electrical Code Current Edition
ASTM	American Society for Testing Materials
NEMA	National Electrical Manufacturers Association
ANSI	American National Standards Institute
FS	Federal Specification, US Government
CS	Commercial Standards issued by US Department of
Commerce	
NESC	National Electrical Safety Code
NETA	National Electrical Testing Association
ADA	Americans with Disabilities Act

## 1.5 CODES, PERMITS, AND INSPECTIONS

- A. Electrical work, equipment, and materials furnished and installed under this contract shall conform to the requirements of the Power Company, the latest edition of the National Electrical Code, the National Fire Protection Association, and any other governmental or local authorities having jurisdiction. Pay any fees required for the installation of Division 26 work. Certificates of approval shall be obtained in duplicate from any department or agency issuing same, and shall be turned over to the Owner at the completion of the work.
- B. Provide any labor, materials, services, apparatus and drawings required to comply with applicable laws, ordinances, rules and regulations, whether or not shown on the drawings and/or specified.
- C. Obtain certificates of inspection and approval from authorities having jurisdiction and deliver same to Owner as a prerequisite for final acceptance of the work. Provide record copies of permit applications, permits and other items for which certification is indicated.

## 1.6 SPECIAL ENGINEERING SERVICES

- A. In the instance of complex or specialized electrical systems such as fire alarm, or similar miscellaneous systems; the installation, final connections and testing of such systems shall be made under the direct supervision of competent authorized service engineers who shall be in the employ of the respective equipment manufacturer. Provide the Owner with copies of instruction manuals and booklets for each system and piece of equipment installed. Provide any additional instructions to the Owner over and above that listed above in the care, adjustment and operation of parts of the electrical systems.
- B. Pay any and all expenses incurred by these equipment manufacturers' representatives.

## 1.7 SUBMITTALS

- A. Shop drawings, product data, and samples shall be submitted to the Architect for approval.
  - 1. Shop drawings shall be new drawings, and not reproductions or tracings of the Contract Documents. In preparing shop drawings, establish lines and levels for the work specified, and check the drawings to avoid interference with structural features and other work. Immediately call to the attention of the Engineer any interferences for clarification in writing.
  - 2. Manufacturer's literature and data sheets shall be submitted indicating the necessary installation dimensions, weights, materials, and performance information. Each piece of literature shall be identified with the specific specification number, paragraph, and equipment schedule identification.
  - 3. Layout and detail drawings shall be submitted in the form of a sepia reproducible and paper prints. Manufacturer's drawings shall be standard



drawings. Equipment shop drawings shall show specific data and other special features required for review consideration.

4. Equipment shop drawings (8-1/2 by 11 inch sheets) shall be bound together in sets, in loose leaf binders, and shall be indexed in accordance with Specification Section. Additional shop drawings may be submitted at a later date for insertion therein, and the original submittal shall note which shop drawings shall be submitted later. Marked-up catalogs are not acceptable, and shall be rejected.
5. Materials and equipment shop drawings shall be submitted within 30 calendar days of Contract receipt.
6. Manufacturers' instruction manuals shall be submitted together with shop drawings. Furnish instruction manuals and parts listed for each piece of electrical equipment, on 8-1/2 by 11 inch sheets, or catalogs, suitable for loose leaf side binding, packaged separately, and clearly identified. Instructions shall include information pertaining to installation, operation, and maintenance of equipment as applicable. Each piece of literature shall be clearly identified with the specific job equipment identification. Literature shall be factory printed and not reproduced copies.
7. Any characteristic of any piece of equipment which deviates from the characteristics of the equipment specified shall be hi-lighted and circled in red.

B. Submit manufacturers' data, and/or shop drawings of the following:

1. Lighting and Power Panels and Cabinets
2. Wiring Devices
3. Lighting Fixtures
4. Fire Alarm System
5. Distribution Equipment

## 1.8 OPERATING AND MAINTENANCE INSTRUCTIONS

A. After final tests and adjustments have been completed, furnish the services of qualified personnel to fully instruct representatives of the Owner in the operation and maintenance procedures for equipment installed. Operation and maintenance instructions for major items of equipment shall be directly supervised by the equipment manufacturer's representative. Supply qualified personnel to operate equipment for sufficient length of time as required to meet governing authorities' operation and performance tests and as required to assure that the Owner's representatives are properly qualified to take over operation and maintenance procedures.

1. Notify the Architect, the Owner's representatives and equipment manufacturers' representatives, by letter, as to the time and date of operating and maintenance instruction periods at least one week prior to conducting same.
2. Forward to the Architect the signatures of all present for the instruction periods.

B. Furnish three (3) copies of recommended equipment operation and maintenance procedures manuals as specified herein, assembled and bound together in 8-1/2

by 11 inch three-ring binders. The ring binders shall be submitted to the Architect in accordance with procedures established for shop drawing submittals.

1. The operation and maintenance procedures manuals shall include the following:
  - a. Project Title
  - b. Architect's Name and Address
  - c. Date Submitted
  - d. Contractor's Name and Address
  - e. Index (in alphabetical order, with page numbers)
  - f. General Description of Each System
  - g. Parts List, identifying the various parts of equipment for repair and replacement purposes.
  - h. List of spares recommended for normal service requirements.
  - i. Operating instructions outlining step-by-step procedures required for system start-up and operation. The instructions shall include the manufacturer's name, model number, service manual, and brief description of each piece of equipment and its basic operating features.
  - j. Maintenance instructions describing routine maintenance and lubrication procedures and schedules, and simplified diagrams which illustrate the systems as installed.
  - k. Wiring and control diagrams for each piece of equipment, showing "as installed" conditions.

#### 1.9 SINGULAR NUMBER

- A. References made to any item in the singular number shall apply equally to as many identical items that the work may require.

#### 1.10 PROTECTION OF SERVICES

- A. Repair, replace and maintain in service any new or existing utilities, facilities or services (underground, overground, interior or exterior) damaged, broken or otherwise rendered inoperative during the course of construction. The method used in repairing, replacing or maintaining the services shall be approved by the Owner and Architect.

#### 1.11 PROTECTION OF FLOORS

- A. Protect existing flooring from damage during the construction period. Provide plywood or similar material under equipment or materials stored on floors, and in areas where construction may damage the floor surfaces. Replace floor surfaces (including sealer) damaged during the construction.

#### 1.12 TEMPORARY LIGHT AND POWER SERVICES

- A. Refer to the Division 1, General Requirements, of these specifications to determine responsibility for temporary lights, power, water and heat.
- B. The Electrical Contractor is responsible for all temporary power and lighting requirements throughout construction. The Electrical Contractor shall review all associated phasing plans and schedules and provide any and all equipment, either temporary or permanent, required to maintain or provide temporary power and lighting to all areas of this facility, throughout the construction process.

In addition to minimal temporary lighting and power needed for construction operations, areas that will be Owner-occupied throughout construction shall be provided with temporary power and lighting services that meet or exceed the existing services that currently serve these areas.

- C. The electrical documents indicate the final arrangement for the power/lighting/communication/ signal/data systems and do not reflect equipment, devices, etc., needed to provide the required temporary power and lighting services.
- D. At the completion of this project, all temporary lighting, temporary receptacles, and temporary wiring shall be removed in their entirety.

### 1.13 SUBSTITUTIONS

- A. It is the intent of these specifications that wherever a manufacturer or product is specified, and the term "or approved equivalent" is used, the substituted item must conform in respects to the specified item. Consideration shall not be given to claims that the substituted item meets the performance requirements with lesser construction. Performance indicated in schedules, drawings and specifications shall be interpreted as minimum performance.
- B. Note that where specific manufacturers' products are indicated in the Contract Documents, the associated systems have been designed on the basis of that product's physical characteristics. Where specific manufacturers' products are indicated in the Contract Documents and other manufacturers' names are listed, the associated systems have been designed on the basis of the first-named manufacturer's product. When products other than those used as the basis of design are provided, pay additional costs related to modifications to the systems and/or structure required by the use of that product.
- C. Equipment of one type shall be the products of one manufacturer; similar items of the same classification shall be identical, including equipment, assemblies, parts and components.
- D. Materials furnished shall be determined safe by a nationally recognized testing organization, such as Underwriters' Laboratories, Inc., or Factory Mutual Engineering Corporation, and materials shall be labeled, certified or listed by such organizations
- E. Where a specific manufacturer is specified and other manufacturers' names are listed as equivalent, the bid shall be based upon the specified or equivalent

manufacturers only. Any substitutions from the specified or equivalent manufacturers shall be offered as a Bidder's Initiative.

- F. Final acceptance of substitutions shall be at the discretion of the Architect/Engineer.

#### 1.14 PERFORMANCE OF EQUIPMENT

- A. Materials, equipment and appurtenances of any kind, shown on the drawings, hereinafter specified or required for the completion of the work in accordance with the intent of these specifications, shall be completely satisfactory and acceptable in operation, performance and capacity. No approval either written or verbal of any drawings, descriptive data or samples or such material, equipment and/or appurtenance shall relieve the Contractor of his responsibility to turn over the same to the Owner in perfect working order at the completion of the work.
- B. Any material, equipment or appurtenances, the operation, capacity or performance of which does not comply with the drawings and/or specification requirements or which is damaged prior to acceptance by the Owner shall be held to be defective material and shall be removed and replaced with proper and acceptable materials, equipment and/or appurtenances or put in proper and acceptable working order, satisfactory to the Architect and Owner, without additional cost to the Owner.

#### 1.15 WEATHERPROOFING LOCATIONS (WP)

- A. Electrical apparatus, such as outlet boxes, switches, thermal switches or manual starters, disconnect switches, combination switches and starters, motor control centers, and motor starters shall be weatherproof gasketed type, NEMA Types 3 or 4 in the following instances:
  - 1. On surface of exterior face of building, including areas where not under canopies, cast boxes with threaded hubs must be used and under canopies steel boxes with gasket connections to devices.
  - 2. In any areas where specifically noted "WP" or required by the NEC or Electrical Regulations mentioned herein.
  - 3. Within air conditioning enclosures.
  - 4. In underground splice boxes.
  - 5. On building roof.

#### 1.16 CLEANING, PROTECTING AND ADJUSTING

- A. Materials shall be stored in a manner that shall maintain an orderly, clean appearance. If stored on-site in open or unprotected areas, equipment and material shall be kept off the ground by means of pallets or racks, and covered with tarpaulins.
- B. Equipment and material, if left unprotected and damaged, shall be repainted or otherwise refurbished at the discretion of the Owner. Equipment and material is subject to rejection and replacement if, in the opinion of the Architect or the

manufacturer's engineering department, the equipment has deteriorated or been damaged to the extent that its immediate use or performance is questionable, or that its normal life expectancy has been curtailed.

- C. During the construction period, protect ductwork, raceways, conduit and equipment from damage and dirt. Properly cap ductwork and conduit.
- D. Vacuum cabinets, switch boards, distribution panels, lighting and power panels, etc., after completion of work.

#### 1.17 ACCESSIBILITY

- A. Coordinate to ensure the adequacy of the size of shafts and chases, and the adequacy of clearances in hung ceilings and other areas required for the proper installation of this work.
- B. Locate equipment which must be serviced, operated or maintained in fully accessible positions. Equipment requiring access shall include, but is not necessarily limited to, motors, junction boxes, fire dampers, controllers and switchgears.
- C. Provide, as required, the exact locations of access doors. Provide access doors in finished construction for installation by others. Locations of access doors in finished construction shall be submitted in sufficient time to be installed in the normal course of the work. Keep conduit and other electrical devices clear of access door openings to allow adequate space to work in or enter the concealed space.
- D. Access panels shall not be smaller than 12 inches by 16 inches and shall be all-steel construction with a No. 16 gauge wall or ceiling frame and a No. 14 gauge panel door with not less than 1/8 inch fireproofing secured to the inside of the door. Doors shall be provided with concealed hinges and be secured with suitable clips and countersunk screws. Outside of access panels shall finish flush with finished wall or ceiling surfaces. Covers shall be factory primed with two (2) coats of primer.

#### 1.18 GUARANTEE

- A. Guarantee material, equipment and workmanship for a period of one (1) year from date of final acceptance by Architect and Owner. Replace defective material and workmanship furnished and installed and other work and equipment damaged thereby.
- B. In addition to the one (1) year guarantee, furnish any warranties or guarantees that normally come with specific pieces of equipment that exceed the one (1) year guarantee. These additional warranties shall be given to the Owner for the time period specified.

## 1.19 OWNER COORDINATION

- A. Coordinate any and all activities with the designated Owner's representative, which involves a tie to existing electrical systems or which, in any way, may interfere with or interrupt existing electrical systems. Where there are scheduled ties or interruptions or where there is a reasonable chance of interruption, written notice must be obtained from the Owner prior to work commencing.

## 1.20 COORDINATION

- A. Coordinate and furnish in writing to others, including the Architect, any information necessary to permit the work of all contractors to be installed satisfactorily and with the least possible interference or delay.
- B. Because of the complexity of the construction of this project, each Contractor shall participate in the preparation of coordination drawings. The procedure shall be supervised by the Construction Manager. No installation of permanent systems shall proceed until the coordination drawings are approved by the Construction Manager and the Architect. No extra charges shall be allowed for changes required to accommodate installation of system by other contractors.
- C. Coordination drawings shall be prepared for each floor level and shall be of a scale not less than 1/4 inch - 1 foot. Coordination drawings shall include equipment, lighting, conduit and raceway plans, and elevations with dimensions. Coordination drawings shall also include required access points through ceiling panels, access doors, cover plates, etc.
- D. Devices and appurtenances which are to be installed in finished areas shall be coordinated with the Architect for final approval as it relates to location, finish, materials, color, and texture.
- E. When work is installed without proper coordination, changes to this work deemed necessary by the Architect shall be made to correct conditions without any extra cost to the Owner.

## 1.21 PRE-BID SITE VISIT

- A. Bidders shall visit the site and become completely familiar with existing conditions prior to submitting their bid. No extra charges shall be allowed as a result of existing conditions.

## PART 2 – PRODUCTS

### 2.1 MATERIALS AND WORKMANSHIP

- A. Equipment shall be so built and installed as to deliver its full rated capacity at the efficiency for which it was designed. Equipment shall meet the detailed requirements indicated, and shall be suitable for the installation shown.

- B. Where two or more units of the same class of equipment are furnished in same Section of Specifications, provide each from the same manufacturer. Furnish equipment and materials new and free from defects of size, make, type and quality herein specified, or as reviewed. Work shall be installed in a neat and workmanlike manner.
- C. Capacities, dimensions, or sizes specified or indicated are minimum, unless otherwise stated. Tolerances used in rating or testing standards specified shall not be allowed in determining capacities of equipment.
- D. Materials shall be listed by the Underwriters' Laboratories, Inc. where applicable and shall be manufactured in accordance with applicable standards established by ANSI, NEMA, ASTM, and IEEE.
- E. Any products judged not in accordance with the Specifications either before or after installation shall be rejected.
- F. Where products are specified with no reference to a particular manufacturer's product, the product used shall meet or exceed industry construction and testing procedure standards applicable to the product, for life expectancy, performance and safety.
- G. Where electrical products are a fabricated assembly, the fabricator shall assume responsibility for correct operation of the entire assembly and of its individual components.
- H. Tools: Provide special tools for proper operation and maintenance of the equipment.

## 2.2 IDENTIFICATION

- A. Switchgear, panels, relays, terminal control cabinets, junction boxes, contactors, circuit breakers, safety switches, motor starters, and similar items shall be identified with a single plastic nameplate made up of two laminated black plastic sheets bonded with a middle sheet of white plastic and characters engraved in one black sheet to the depth of the white plastic. Nameplate shall read as follows:
  - 1. First line shall be 1/2 inch letters stating panel/equipment name.
  - 2. Second line (if applicable) shall be 1/4 inch letters stating the existing panel name in parentheses ( ).
  - 3. Third line shall be 1/4 inch letters stating voltage/phase.
  - 4. Fourth line shall be 1/4 inch letters stating breaker number, panel number, and room name/room number (Owner's room number) from which it is fed.
  - 5. Fifth line shall be 1/4 inch letters stating function and/or equipment which it controls.
- B. A typewritten list of nameplates shall be submitted to the Owner and the Architect for approval before ordering same.

- C. Label receptacle plates with identification showing panel and breaker number from which it is fed. Labels shall be made using the Dymo Posiprinter System.
- D. Label junction boxes and pull boxes, showing circuit numbers contained in the enclosure. Use an approved marking device.
- E. Label wire with an identification tag showing panel and breaker number from which it is fed at splices, junctions, and terminations as explained in this specification.
- F. Label fire alarm device bases with identification showing device address number assigned by fire alarm system manufacturer. Labels shall be made using the Dymo Posiprinter system.

### 2.3 ANCHOR BOLTS

- A. Provide and set in place, at the time of pouring of concrete foundations, necessary anchor bolts as required for the equipment called for under these specifications. Anchor bolts shall be of the hook type, of proper size and length to suit the equipment. Anchor bolts shall be set in pipe sleeves of approximately twice the bolt diameter and one half the embedded length of the bolt. Assume full responsibility for proper emplacement of the bolts.

### 2.4 INSERTS

- A. Provide inserts of an approved metallic type for hangers. Where two or more parallel conduits are installed, continuous inserts may be used. Where required to distribute the load on the inserts, a piece of reinforcing steel of sufficient length shall be passed through the insert.

### 2.5 SLEEVES

- A. Provide sleeves in all roofs, floors, and any fire-rated walls. Each sleeve shall extend through its respective floor, wall or partition and shall be cut flush with each surface unless otherwise required.
- B. Sleeves in bearing and masonry walls, floors and partitions shall be standard weight steel pipe finished with smooth edges. For other than masonry partitions, through suspended ceilings, and for concealed vertical piping, sleeves shall be No. 22 USG galvanized iron.
- C. Sleeves shall be properly installed and securely cemented in place.
- D. Floor sleeves shall extend 1 inch above the finished floor, unless otherwise noted. Space between floor sleeves and passing conduit shall be caulked with graphite packing and waterproof caulking compound.
- E. Where conduits pass through waterproofed floor or walls, design of sleeves shall be such that waterproofing can be flashed into and around the sleeves.



- F. Where conduits pass through roofs, sleeves shall be installed and flashed and made watertight by the General Contractor unless otherwise specified or shown on the drawings.
- G. Sleeves through exterior walls below grade shall have the space between conduit and sleeve caulked watertight using an approved method.

## 2.6 FIREPROOFING

- A. Where sleeves or other penetrations pierce floors or walls having specific fire ratings, the space between the sleeve and passing conduit shall be fireproofed using 3M Series 7900 Penetration Fire Stop putty. Where a cable tray passes through fire-rated walls, use seal bags as manufactured by International Protection Coatings Company. Installation method shall be per manufacturer's recommendations and approved by the Architect/Engineer.

## 2.7 WIRE GAUGE

- A. The sizes of conductors and thickness of metals shown on the drawings or mentioned herein shall be understood to be American Wire Gauge.

## 2.8 MISCELLANEOUS METAL AND STRUCTURAL STEEL

- A. Scope of Work: Furnish labor, materials, equipment and services necessary for the installation of miscellaneous metal and structural steel work required to complete this contract. Erect structural steel required for the proper support of equipment required under this contract.
- B. Supports, brackets, and clamps and other items specified herein shall be installed in strict accordance with the best practices and recognized code.
- C. Materials: Structural steel members required under this part shall conform to ASTM Standard Specification A-7. Other materials shall be as specified hereinafter.
- D. Priming: steel and iron work shall be primed with Rust-Oleum 769 or approved equivalent. Before priming, metal shall be thoroughly cleaned free from scale, rust and dirt.
- E. Anchors: Provide anchors, bolts, screws, dowels and connecting members, and do cutting and fitting necessary to secure the work to adjoining construction. Build in connecting members to masonry, concrete and structural steel as the work progresses.
- F. Supports and Brackets: shall be neatly constructed to structural shapes to adequately support the equipment intended. Supports must be approved prior to installation. Attention is directed to the proper rigid support required for conduit. Field conditions shall regulate the type of support required.

## 2.9 VIBRATION ISOLATION MOUNTS

- A. Provide vibration isolation mounts for all substations, power centers, transformers, etc. All vibration isolation mounts shall be Amber-Booth spring type applicable for the size and weight of the equipment.

## 2.10 GRADING, FERTILIZING, AND SEEDING

- A. Provide labor, materials, equipment, and services required to strip and store topsoil, replace topsoil, and rough and finish grade and fertilize and seed areas disturbed beyond the work area of the General Contract. Topsoil must be stored where directed on the site.

## 2.11 BITUMINOUS PAVING

- A. Provide labor, materials, equipment, and services necessary to repair pavements disturbed under the Contract.
- B. Materials, methods, and workmanship shall conform with the requirements of the PA Department of Highways, as published in its specifications Form 408, as amended to date.
- C. All patching of existing areas shall match existing materials.

## 2.12 MOTORS

- A. Motors shall be built in accordance with the latest standards of NEMA and as specified. Motors shall be tested in accordance with ASA C50 and conform thereto with respect to insulation resistance and dielectric strength.
- B. Each motor shall be provided with conduit terminal box and adequate starting and protective equipment as specified or required. The capacity shall be sufficient to operate associated driven devices under conditions of operation and load and without overload, and shall be at least the horsepower indicated or specified. Each motor type shall be for quiet operation.
- C. Motor starting equipment must be selected so that starting currents or transients do not have an adverse effect on lighting or other electrical equipment. No open transition wye-delta starting of motors shall be permitted.

## PART 3 – EXECUTION

### 3.1 GENERAL

- A. Provide information to the General Contractor for any chases or openings required under this Contract. No cutting shall be done which may affect the building structurally or architecturally without the prior approval of the Architect. Damaged construction shall be restored to its original conditions and finished to

match the surrounding work. Refer to "Supplementary General Conditions" for the disposition of Cutting and Patching.

- B. Grades, elevations, and dimensions shown on the drawings are approximately correct; however, field check and otherwise verify such data at the site before proceeding with the work. Make necessary survey equipment available at all times and make use of such equipment wherever necessary to properly install equipment.
- C. The Contractor shall be entirely responsible for apparatus, equipment, and appurtenances furnished by him or his subcontractors in connection with the work and special care shall be taken to protect parts thereof in such manner as may be necessary or as may be directed. Protection shall include covers, crating, sheds or other means to prevent dirt, grit, plaster or other foreign substances from entering the working parts of machinery or equipment. Special care shall be taken to keep open ends of pipes closed while in storage and during installation. Where equipment must be stored outside the building, it shall be totally covered and secured with heavy weatherproofing tarps and kept dry at all times. Where equipment has been subjected to moisture, it shall be removed from the site and replaced with new equipment. Protect open excavating until covered over.
- D. Due to the schematic nature and small scale of the electrical drawings, it is not possible to indicate exact locations, offsets, fittings, access panels, pull boxes, and miscellaneous parts which may be required to form a complete system. The drawings are generally indicative of the work to be installed. Arrange work accordingly furnishing necessary parts and equipment as may be required to meet the various conditions and to provide a complete circuit from end use device to circuit protective device in panel.
- E. The Contractor shall include in his bid price, the cost to furnish and install twelve (12) additional 20 amp circuits For each panel shown on the drawings. Each circuit shall include up to eight (8) receptacles along with circuit breakers, conductors, ground, and conduits.
- F. Within thirty (30) days after acceptance of bids, submit to the Architect for approval, a complete list of equipment and materials to be furnished under this contract, giving names and addresses of manufacturers and material they intend to furnish. This source of supply shall be listed on forms available from the Architect.

### 3.2 CLEARANCES

- A. Take caution when on routing conduit and location of equipment. In many cases, clearances in ceiling plenums is limited due to ductwork and other mechanical lines and systems and steel. The Contractor shall be responsible for routing around mechanical equipment and ducts in order that everything can remain concealed in finished areas.

### 3.3 CUTTING AND PATCHING

- A. Provide cutting and patching necessary to install the work specified herein. Patching shall match adjacent surfaces. Refer to Section 01045, Cutting and Patching, for specific direction.
- B. No structural members shall be cut without prior approval of the Architect, and such cutting shall be done in a manner directed by the Architect.
- C. Provide ceiling removal and replacement where work above ceilings is required. Replace ceiling components damaged in the process.
- D. Provide patching where electrical devices are removed from walls, ceilings or floors as required under demolition.

### 3.4 PAINTING

- A. Finished painting shall be performed by others except for standard factory finishes.
- B. Electrical motors, pump casings, and other similar items shall be provided with three coats of machinery enamel at the factory, and shall be carefully cleaned, rubbed down, and oiled after installation.

### 3.5 LOCATIONS

- A. Apply for detailed and specific information regarding the location of equipment as the final location may differ from that indicated on the drawings. Outlets, equipment or wiring improperly placed because of failure to obtain this information shall be relocated and re-installed without additional expense to the Owner. Determine the actual direction of door swings, so that local switches and other controls shall be installed at the lockside of doors, unless otherwise noted. Improperly located switches shall be relocated without additional expense to the Owner.
- B. The design shall be subject to such revisions as may be necessary to overcome building obstructions. No changes shall be made in location of outlets or equipment without written consent of the Architect and Owner.
- C. Unless otherwise mentioned or indicated, mounting heights of outlets are shown on the drawings or in the specification. Dimensions given shall be considered to be from center of outlet to finished floor.

- D. Coordinate the exact location and elevation of all electrical devices and fixtures with the architectural interior elevation plan and reflective ceiling plan prior to installation.
- E. Properly rough for the electrical conduit and equipment under this contract and modify as required for coordination during the construction period.

### 3.6 DUST, DIRT AND NOISE

- A. Carry out new work and make changes, relocations, and installations with a minimum of noise. Site areas and new equipment, floors and walls, shall be adequately protected from dust and dirt caused by the work. Protection shall include suitable temporary barriers or coverings. The exterior and interior premises of each building shall be kept clean as possible during construction. Damages to surfaces or equipment as a result of negligence shall be replaced or corrected as required.

### 3.7 RECORD DRAWINGS

- A. During the construction period, maintain in good order a complete set of blue line electrical contract drawings. Record the actual electrical installation as the work progresses. Include changes to the contract and to equipment sizes and types. Keep these drawings available at the site at all times for inspection.
- B. Take proper caution against the use of superseded drawings. Check such copies and mark "void." Where drawings have been corrected by memorandum, assume the responsibility for marking all drawings so affected with the changes; such marked drawings shall remain in use until revised drawings are issued.
- C. At the conclusion of the work, obtain a set of sepias from the Architect. Incorporate "as built" data in a clearly legible manner. Return such marked prints or sepias within 30 days to the Architect.
- D. At the conclusion of the work, provide to the Architect a complete set of drawings which indicate precisely how the electrical single line and riser diagram equipment has been installed. Return such reproducible drawings within 30 days to the Architect.

### 3.8 EQUIPMENT, FOUNDATIONS, SUPPORTS, PIERS AND ATTACHMENTS

- A. Provide necessary foundations, supports, pads, bases and piers required for equipment specified in this division; submit drawings in accordance with Shop Drawing Submittal requirements prior to the purchase, fabrication or construction of same.
- B. Provide concrete pads for base-mounted transformers and rotating equipment, and for floor-mounted equipment located in equipment rooms and as indicated on the drawings. Pads shall be extended 6 inches beyond matching base in all directions with top edge chamfered. Inset 6 inch steel dowel rods into floors to anchor pads.

- C. Construction of foundations, supports, pads, bases and piers, where mounted on the floor, shall be of the same materials and same quality of finish as the adjacent and surrounding floor material.
- D. Equipment shall be securely attached to the building structure in an approved manner. Attachments shall be of a strong and durable nature and any attachments that are, in the opinion of the Architect, not strong and durable shall be replaced as directed.

### 3.9 SCAFFOLDING

- A. Furnish and erect scaffolding and ladders required in the installation of wiring, equipment and fixtures.

### 3.10 ENVIRONMENTAL AIR PLENUMS

- A. In spaces over hung ceiling which are used for environmental air handling purposes as defined by Article 300.22C of the National Electric Code, power data and communications cable must be in conduit or of the type cable rated for air plenum use. Cable type and/or raceway is generally indicated on the electrical drawings and specifications although the Contractor shall be responsible to clearly define ceiling space used for environmental air purposes.

END OF SECTION

## WIRES AND CABLE

### PART 1 – GENERAL

#### 1.1 DESCRIPTION

- A. Provide wires and cables in accordance with the Contract Documents.
- B. This section includes cable requirements for systems below 600 volt insulation.
- C. Conductors shall be soft drawn copper having conductivity not less than 98 percent.
- D. No aluminum conductors or lugs or splicing devices shall be permitted.
- E. All wiring and cables shall be installed in raceway unless otherwise noted.

### PART 2 – PRODUCTS

#### 2.1 600 VOLT WIRE

- A. Insulation and conductor types shall be as follows:
  - 1. Conductors shall have a 600 volt insulation 90°C heat resistant type THHN.
  - 2. All wire shall be stranded, unless otherwise noted.
- B. Manufacturers:
  - 1. Cablec Continental Cable Company
  - 2. Pirelli Cable Corporation
  - 3. Southwire Corporation
  - 4. The Okonite Company

#### 2.2 TYPE MC CONDUCTOR CABLE

- A. Conductors connecting receptacle and switch circuits in partitions to lighting and power grid boxes in finished areas only, in accordance with the NEC, may be 3-, 4-, or 5-wire, Type MC, consisting of #12 AWG copper THHN insulated phase conductors and one full size green insulated conductor, where acceptable to the authority having jurisdiction. Ground conductor shall be terminated to grounding system as required by NEC and authority having jurisdiction. All conductors shall be stranded, unless otherwise noted, and shall be enclosed in the flexible steel armored cover.
- B. Manufacturers:
  - 1. AFC/A Nortek Company
  - 2. Rome Cable Company
- C. Permitted Uses

1. From building wiring junction box to each light fixture in lengths not to exceed 6 feet.
2. Branch circuit wiring to room electrical devices.

### 2.3 PLENUM CONDUCTOR CABLE

- A. Plenum conductor cable may be used for NEC Class 2 or 3 wiring if conductor cable is UL listed in accordance with UL 910 and UL 1820 and is installed in accordance with the NEC and is acceptable to the Authority having jurisdiction. Insulation types, UL listing, and written acceptance by the local authority shall be submitted for review.

## PART 3 – EXECUTION

### 3.1 INSTALLATION

- A. Provide circuit wiring complete as shown on the drawings, and as hereinafter specified or required. The minimum size of wire for branch circuits shall be No. 12, except 120 volt circuits over 100 feet in length shall be No. 10; 120 volt circuits over 150 feet in length shall be No. 8. Wiring shall be increased in size if so demanded by wattage of load.
- B. 600 volt wiring shall be color coded. Consistent phase identification of wires from service feeders to branch circuit wires shall be maintained as follows:
  1. 120/208 volts - Normal - Phase A ..... Black
  2. 120/208 volts - Normal - Phase B ..... Red
  3. 120/208 volts - Normal - Phase C ..... Blue
  4. 120/208 volts - Neutral..... White
  5. 120/208 volt - Ground Wire ..... Green
- C. Fire alarm wiring color coding shall be per manufacturer's recommendation or as directed by the Owner to match existing.
- D. Do not pull wires into raceways until raceways are permanently in place and termination points are not subject to damage.
- E. Do not use uninsulated wire conductors.
- F. Provide excess free conductor end length at termination points, adequate to make up splices and terminations, permitting neatly training conductors, and in any case not less than:
  1. No. 14 through 10 AWG - 6 inches
  2. No. 8 or 6 AWG - 10 inches
  3. Larger than No. 6 AWG - 18 inches
- G. Support vertical cables as required by Code. Use lock type cable support bushings having internal wedges and retaining collars. Locate support points in readily accessible pull boxes sized to code requirements.



- H. Circuit wiring in cabinets, panels, pull boxes, etc., shall be tied and held with Thomas & Betts Nylon Self-Locking Ty-Raps, or approved equal.
- I. Equip large pull, junction or terminal boxes with suitable racks to support, arrange, and retain wire and cable in an orderly manner.
- J. Equip conductors smaller than No. 4 AWG, in wireways, gutters, pull boxes, terminations, etc., with Thomas & Betts E-Z-code wire markers. Designate panel and circuit number on each individual marker.
- K. Equip conductors No. 4 AWG or larger size, and feeder conductors with metal, fibre or fireproof linen tags or with wrap around markers. Designate panel circuit number on each individual marker. In addition, designate use of each set of conductors on a common tag or on each individual conductor marker. Tagging shall include panel source and feeder size of equipment supply.
- L. Where the single pole work is used on branch circuits, circuit wiring may be grouped in accordance with the NEC. The drawings are schematic and diagrammatic and indicate the general method of installing circuit wiring and the outlets which are to be supplied.
- M. Lighting and convenience outlet circuiting are indicated on the drawings separately as single pole work for clarity; however, grouping circuits in accordance with the NEC and connecting to circuit boxes at any convenience point as required by the NEC, providing a minimum of 20 percent spare future capacity in each raceway, is permitted.
- N. The minimum sizes of wire on an installation shall be as follows:
 

Lighting and Power Circuits .....	12 AWG
Signal Circuits - with common or individual leads.....	14 AWG
Remote Control Leads .....	As recommended by manufacturer
Low Voltage Light Control, Intercom, .....	Twisted Pair, Non-Shielded or
Nurse Call, and Fire Alarm Systems .....	Shielded as shown on drawings or recommended by manufacturer
Fixtures .....	14 AWG Min. and as required by Underwriters Laboratories
- O. Install in each empty interior conduit, one nylon measuring fish line for the future installation of wire and cable.
- P. Great care shall be exercised in pulling wires into the conduits so as not to injure the insulation. Only UL approved lubricants shall be used to assist in the pulling in of wires with an outer covering or braid.

- Q. Where switch boxes are used as the termination of the "home runs" in addition to the switch legs, not less than a two-gang box shall be used, in order to provide ample room for wiring.
- R. Branch lighting circuits feeding exterior yard lights and parking lot lights shall be direct burial cable type UF moisture resistant with 600 volt insulation. Where drawings indicate use of conduit, the cable feeding these lights shall be pulled in rigid steel conduit and shall utilize standard type THHN wire. This conduit shall not require a concrete envelope, however, it shall have each joint sealed watertight with a suitable mastic and sealing compound. Install the cable feeding exterior in PVC conduit with a concrete envelope as described elsewhere in the specifications in "Underground Raceways."
- S. The size and general location of the various feeders are shown on the drawings; however, determine the exact location and routing of feeders at the site.
- T. Communications, sound and other low voltage wiring shall be of size and insulation recommended by the manufacturer of the equipment being served.
- U. In every pull or splice box and all other places where wires and cables may not be readily identified by nameplate on the equipment to which they connect, each circuit shall be identified with a permanent identification tag securely fastened to the conductors. Conductors of a feeder or branch circuit shall be laced together prior to tagging. Identification tags shall have the number of conductors, gauge and circuit identification stamped thereon in 1/4 inch high letters. Tags shall be made of a non-metallic material and shall be approved before installation.
- V. Where Type MC conductor cable is used, provide proper support from building structure or install in "power" section of cable tray.
- W. Each 120 volt designated circuit shall have its own individual full size neutral and insulated equipment ground throughout the circuit.

END OF SECTION

# GROUNDING

## PART 1 – GENERAL

### 1.1 DESCRIPTION

- A. Provide all system equipment and static grounding in accordance with the Contract Documents and in full compliance with Article 250 of the National Electric Code 2014 Edition, and local codes.
- B. Ground every device and metal part of the electrical system.
- C. Maintain continuity of system and equipment grounds throughout the electrical installation unless specifically shown otherwise. Provide ground bushings and jumpers where normal metallic ground paths are interrupted.
- D. Grounding shall be accomplished by means of a grounding triod as indicated on the drawings and generally outlined in the subsequent paragraphs. In addition, grounding shall be connected to the city water feed.
- E. All electrical equipment, cabinets, boxes, conduit and metal raceways shall be grounded in accordance with the NEC, NFPA 99 and as shown on the drawings and as specified herein.
- F. All connections to apparatus and conduits shall be made with an approved type of solderless connector. Connectors shall be securely bolted or clamped to the equipment. All contact surfaces shall be thoroughly cleaned and bright before connections are made in order to insure a good metal-to-metal contact.
- G. All underground cable splicing shall be thermite welded.
- H. Tie all grounding systems together at their origins as shown on the Drawings and as called for by the NEC.
- I. Provide an insulated ground wire sized in accordance with the NEC in every conduit carrying 100 amps or over, whether or not it is shown on Drawings.
- J. A solid ground shall be provided for the complete conduit system, feeder neutrals, motor frameworks, transformer cases, neutral of 480 volt and 208 volt building service, heating equipment enclosures, and other items as required.

### 1.2 GROUNDING TRIOD

- A. Driven rod assembly shall consist of four (4) ground rods with three (3) spaced 6 feet apart forming an equilateral triangle and one (1) in the center.
- B. One of the rods shall be equipped with a clamp at the top to accommodate a No. 4/0 bare stranded copper ground cable to the system ground base. A No. 4/0 bare stranded copper cable shall circle the three rods and be brazed to each rod. Cable shall tie into system neutrals and switchgear cases, and other metallic parts as required.

- C. Upper portions of the ground rods shall be located near the surface. Cables connecting ground rod assemblies shall be installed 2 feet below grade. Grounding conductors shall be installed in such a manner as to allow the shortest and most direct path between equipment and ground.

### 1.3 CITY WATER PIPE CONNECTION

- A. The supplemental grounding system shall be comprised of a common ground bus cable interconnected to an acceptable metallic cold water service pipe. The water pipe connection shall be made with a clamp type ground fitting that bonds the cable to the water pipe. Around the water meter, a bonding jumper shall be installed and connected by means of approved ground clamps.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Ground conductors shall be of size indicated or required by code and type/manufacturer as listed in Section 16120, Wires and Cables.
- B. Ground rods shall be copper-clad steel, 3/4 inch diameter and 10 feet long.
- C. Connectors shall be as manufactured by Burndy, O.Z. Gedney, or Erico.
- D. Exothermic welding shall be Erico, Burndy, or O.Z. Gedney.
- E. Accessible connections shall be made with multiple bolt silicon bronze connectors specifically designed and approved for the connection to be made.

## PART 3 – EXECUTION

### 3.1 INSTALLATION

- A. The neutral wire for the electrical system shall not be used to ground miscellaneous conduits.
- B. Ground wires required by the National Electrical Code and/or the utility company.
- C. The resistance between the grounding system and absolute earth shall not exceed 10 ohms and shall be measured in the presence of the Architect's representative.
- D. The equipment grounding terminal bars of the normal and essential electrical system panel boards shall be bonded together with an insulated continuous copper bonding jumper not smaller than No. 4 copper.

### 3.2 EQUIPMENT GROUNDING

- A. Cable shielding, metallic conduits, wireways, metal enclosures of busways, cable boxes, electrical equipment housings and all noncurrent carrying metallic parts shall be grounded. Run a separate ground wire to all equipment.
- B. All conduit stub-ups shall be grounded and where multiple stub-ups are made within an equipment enclosure, such as a switchboard, they shall be equipped with grounding bushings and bonded together and to the enclosure and the enclosure ground bus.
- C. Provide bonding devices, fittings or jumpers at expansion fitting, isolation sections or wherever continuity of ground is broken.
- D. Install all grounding conductors with sufficient slack, to avoid breaking due to settlement or movement of conductors or attached points.
- E. Motors shall be grounded by means of a grounding conductor in the same raceway with the motor feeder connected to a grounding bushing at the motor terminal box and the ground bus in the motor control center or to the incoming conduit grounding bushing of an individually mounted motor starter.
- F. Where flexible conduit is used for all or part of a conduit run, except lighting branch circuits, a grounding conductor shall be provided in the conduit and connected to grounding bushings at each end of the run.
- G. Under no circumstances shall a neutral conductor or neutral bar in an enclosure be grounding.

### 3.3 FEEDER GROUNDING

- A. Run a separate insulated ground for feeders.
- B. Size grounds in accordance with the NEC or as noted on the drawings.

END OF SECTION

## FUSES

### PART 1 – GENERAL

#### 1.1 DESCRIPTION

- A. Provide fuses in accordance with the contract documents in motor starters, switchgear assemblies, panel boards and disconnect switches.
- B. Fuses in equipment shall be furnished by the respective contractor supplying the device and installed under this Division.
- C. Provide a complete set of three (3) spare fuses for each fuse size and type used.
- D. All fuses provided shall be of the indicating type, employing either an indicating window or a mechanical indicator striker pin.

### PART 2 – PRODUCTS

#### 2.1 MANUFACTURER

- A. Fuses shall be of the high interrupting rating, current limiting type and manufactured by the Bussman Company, Chase Shawmut, or Littelfuse.

### PART 3 – EXECUTION

#### 3.1 INSTALLATION

- A. Ensure that fuses are firmly and completely inserted into fuse holders and that mechanical joints are tightened.

END OF SECTION

## MOTOR AND CIRCUIT DISCONNECTS

### PART 1 – GENERAL

#### 1.1 DESCRIPTION

- A. Provide motor and circuit disconnect switches in accordance with the Contract Documents.
- B. Switches shall be of proper horsepower rating as applicable for the load served and have dual interlocks designed to interlock the switch box door with the switch operating mechanism. Unit shall be provided for locking the operating handle in the "ON" or "OFF" position.

### PART 2 – PRODUCTS

#### 2.1 MATERIALS

- A. Disconnect switches shall comply with the following requirements, unless otherwise indicated or specified:
  - 1. Enclosure: NEMA 1, surface type in dry locations. Use NEMA-3R for exterior locations and wet locations where walls are washed.
  - 2. Ratings: Voltage, ampacity, horsepower and inductive ratings complying with power source voltage and characteristics of load controlled.
  - 3. Mechanism: Heavy duty, quick-make, quick-break, with voidable interlock to prevent opening enclosure in "ON" position. External lockable handle operation with provision for not less than two padlocks.
  - 4. Poles and Fusing: Comply with load requirements. Provide unfused switches except where fusing is indicated or required to comply with Code requirements. Where fuses are installed, use dual-element fuses.
  - 5. Poles and Overcurrent Protection: Comply with load requirements. Provide unfused switches except where overcurrent protection is indicated or required to comply with Code requirements. When required, install breaker type disconnects. Breaker shall be designed and rated for motor load protection specifically.
  - 6. NEMA Standard: Comply with KSI-1969, Part Four.
  - 7. Switches in hazardous areas shall be in enclosure bearing UL label for installation in class and division of hazard.
  - 8. Finishes: Light gray ANSI-61.
- B. Provide power disconnect switches of the following manufacturers with characteristics complying with load and power source indicated:
  - 1. Square D: Type HU.

### PART 3 – EXECUTION

#### 3.1 INSTALLATION

- A. Provide the number of poles necessary to include a pole for each ungrounded conductor. Equip switch with neutral terminal point where neutral is present. Do not switch neutral.
- B. In finished areas, disconnect switches shall be flush mounted. Use circuit breaker type if switch type is not available for flush mounting.
- C. In areas remote from the distribution panel board necessary to meet code provide non-fused disconnect switches for motors and equipment not already shown to be furnished by others.

END OF SECTION



# EARTHWORK

## PART 1 GENERAL

### 1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Excavation shall also be in accordance with NJDOT Specifications Section 202.

### 1.02 SUMMARY:

- A. The Contractor shall furnish all supervision, labor, materials, tools and equipment to complete clearing, grubbing, excavation, filling, grading, fine grading, and backfilling as indicated, specified herein, including, but not limited to complete restoration and rehabilitation of all areas disturbed by contractors within and without the "Contract Limits". All areas included in the "Contract Limits" shall be fine graded as specified in this section.
- B. This Contractor shall include:
  - 1. Excavation for all foundations as detailed on the drawings or as required.
  - 2. Backfill as required around foundations, pits, and walls.
  - 3. Placement and compaction of structural fill as required to raise existing subgrade to required elevation for slabs.
  - 4. Excavation for utilities, mechanical, plumbing and electrical work is a part of this contract. If these excavations are done by the specific trade or by the General Contractor, all work shall comply with these specifications.
  - 5. Pumping and removal of water from any source.
  - 6. Removal from site and disposal of excavated materials unsuitable for fill or backfill, excess excavation, trees, brush.
- C. The Geotechnical Investigation for this project is for informational purposes only. The Architect and Owner assume no responsibility for the conclusions drawn therefrom.

### 1.03 RELATED WORK:

- A. Division 26- Electrical: General Electrical Provisions.

### 1.04 REFERENCE DOCUMENTS:

- A. The following publications are incorporated in this specification by reference and have the same force and effect as if bound herein.
- B. American Society for Testing and Materials (ASTM).

1. D1556 – Test Method for Density.
2. D1557 – Standard Test Method for Moisture-Density Rotations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 in. Drop.
3. D2167 – Test Method for Soils In Place.
4. D2487 – Standard Test Method for Soils Classification.
5. D2937 – Density of Soil in Place by the Drive-Cylinder Method.

C. All applicable state and local code and other jurisdictional requirements.

#### 1.05 SUBMITTALS:

##### A. Material Test Reports:

1. As compaction of materials progress, conduct and report results from a qualified geotechnical testing agency indicating and interpreting test results for compliance with the compaction requirements indicated, based on comprehensive testing of current work.
2. Testing shall be for each 20 C.Y. material placed but not less than one for each day's work.

#### 1.06 QUALITY ASSURANCE:

- A. Employ a qualified independent geotechnical testing and inspection laboratory to perform soil testing and inspection service during earthwork operations, conduct tests, analyze and report results.
- B. Employ workman, equipment, materials and methods of accepted practice as regularly engaged in this type of work.

### PART 2 PRODUCTS:

#### 2.01 BACKFILLING & FILL:

- A. Subgrade Material: Prior to construction of any subbase, base or pavement course, all soft or yielding portions of the subgrade which do not attain the required stability will be removed and replaced with borrow excavation, selected material, designation I-13.
- A. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, natural or crushed sand, as required and as acceptable to the Geotechnical Engineer.
- B. Drainage Fill: Bank-run gravel, naturally occurring material from the pit uniformly graded from 1" gravel down to no more than 10 percent non-plastic fines passing the 200 sieve.
- C. Controlled Fill and Fill Material: Selected material without high clay content and free of rubbish, large stones, masses of masonry and other objectionable materials to permit obtaining a high degree of compaction and avoidance of future settlement.

Fill shall include between 5 and 15 percent fines. All material shall be approved by the Geotechnical Engineer.

- D. All shall be compacted in 8 inch layers to 95 percent modified maximum dry density, ASTM D1557. Rollers, bulldozers or vibratory compactors shall not be used in the compaction of earth directly against foundation walls or pipe or conduit trenches. Compaction tests shall be made by Geotechnical Testing Laboratory.
- F. Remove any excavated material not suitable or not required for fill or backfill from the premises and dispose of same.
- G. Excavated earth shall be used for backfill unless otherwise directed by the Engineer.
- H. No fill material shall be placed when either fill or subgrade is frozen, or thawing or during unfavorable weather conditions.

## 2.02 WATER:

- A. Provide water and transport water to and on the site, as required to assure proper moisture content for completion as specified.

## PART 3 EXECUTION

### 3.01 SITE PREPARATION:

- A. After clearing and removal of surface debris, strip topsoil no deeper than existing material. Stockpile on site where directed by Architect for future use by the Contractor to complete the project.
- B. During a dry and favorable weather period, and under the technical supervision of the Geotechnical Engineer, proofroll and compact the resulting subgrades with a heavy static drum, kneading type roller. The roller shall be operated without vibration when within 8 feet of existing building. Additional passes may be required until the grade offers a relatively yielding surface or until the specific degree of compaction has been achieved, as directed by the Geotechnical Engineer.
- C. Undercut any zones of instability disclosed by the proofrolling and replace the undercut material with controlled fill.
- D. Raise the site to proposed subgrade elevation with controlled fill.

### 3.02 EXCAVATION:

- A. Excavate to proper depths with allowances for floor slabs, walls, forms, center, shoring, waterproofing, and inspection of foundation.
- B. Footing Bottom: Firm, level, clean and clear of loose material. Protect bottom of excavation from frost.
- C. Trenches: Sharp and true to dimensions.

- D. Grade areas under floor slabs that rest on earth to a smooth firm surface.
- E. No work excavated to greater depth than required by plans and specifications. Deeper excavations shall be filled with concrete at contractor's expense.
- F. Excavation for Footings, Walls, etc.: Extend sufficiently to permit the setting of forms, installation of sheet piling or the safe raking of banks.
- G. Excavate for utilities, ducts and pits as required.
  - 1. Use proper size backhoe or other appropriate excavating equipment. Cut narrowest trench practical.
  - 2. If walls of excavation will not retain, provide and construct shoring as required.

### 3.03 BACKFILL & COMPACTION:

- A. After pipe, conduit, or other underground equipment is installed, graded and secured, carefully backfill in 8 inch layers, compacting each layer to 95 percent optimum density, according to ASTM D1557.
  - 1. Use clean excavated friable material, free of stones or organic materials. If excavated material is not suitable, provide sand or other granular material as specified.
- B. After deep excavations have been completed, backfilled and compacted, prepare the site for floor construction.
  - 1. The entire site within the perimeter walls shall be proof rolled to assure compaction of not less than 95 percent optimum density.
  - 2. Fill any low areas and recompact as necessary to provide a level, even surface for application of floor.
  - 3. Shape floor areas to slope 1 inch to floor drains as indicated on the drawings.
  - 4. Backfill any trenches extending outside the building parameter and return surface to original grade.

### 3.04 PREPARATION OF BASE:

- A. All subgrades to be improved shall be brought to uniform depths required below finished grades and evenly and highly compacted as follows:
  - 1. In excavations use controlled fill that has been tested and approved by the Geotechnical Engineer.
  - 2. Under grassed areas over 5 feet from the building use excavated material (if approved) or borrow material.
  - 3. Under walks, pavements, and steps provide minimum of 4 inch subbase material.
  - 4. Under building slabs use controlled fill and drainage fill material. Use drainage fill for the top layer.

- B. Hard Materials: Removed to a depth of one foot below top of subgrade and be replaced by bank run gravel or other approved fill material to permit subgrade to be properly compacted.
- C. Soft spots in subgrade: Excavated or re-excavated to a depth required for removal of unsatisfactory material and work or reworked to proper compaction.
- D. Subgrade: Compacted by means of machine tampers, vibrators, and such other means as may be required to obtain unyielding subbase to support the base course, slabs, and superimposed loads, without settlement. Compaction tests shall be made by the Geotechnical Testing Laboratory as specified under Division 1- Testing & Inspection.

### 3.05 GRADING:

- A. Rough and finish grade to indicated finished grade. Finish grade at grass areas with topsoil (minimum thickness 6 inches). Existing grade, new grades, and contours are shown on Site Plan. Furnish all necessary subsoil to establish finish grades when 6 inch layer at topsoil is disturbed to elevations shown. At completion, finish grades shall be smooth and to within 1 inch tolerance.
- B. Provide additional topsoil as may be required. New topsoil as required shall be fertile, natural soil, typical of the locality, free from stones, clay and weeds. Prepare topsoil to receive seed by removing stones, and grading to eliminate the low spots and irregularities.
- C. All indicated grading is intended to drain surface water away from the building. If it appears that this intent does not exist in some portion of the work, notify the Civil Engineer and Architect of such condition before proceeding with work affected by this condition.
- D. Remove all stones from topsoil, whether existing or new topsoil.

### 3.06 DEWATERING:

- A. Water from any source shall be diverted and/or pumped out of excavations until completion of foundation work. Water is not to be conducted onto adjacent property. Precautions shall be taken to protect uncompleted work from flooding during storms or from other causes.
- B. Soil at the bottom of the footing excavations shall be exposed to the weather for no more than two days.

### 3.07 SHORING & BRACING:

- A. The use of sheet piling, shoring and bracing to retain earth banks and prevent caving-in shall be used as required.

- B. Design of sheeting, shoring and bracing shall be subject to the approval of local and state authority. Braces: Adequate in size and stiffness and have proper bearing to sustain the loads to which they may be subjected.
- C. Sheeting, where required shall be driven far enough away to permit the proper construction of any work as indicated by the drawings and far enough below to give adequate safety against toe displacement by lateral earth thrusts.
- D. No sheeting shall be driven on any adjacent property.
- E. Shoring and bracing shall be removed before backfilling.

### 3.08 FIELD QUALITY CONTROL:

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. 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 Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2922 and ASTM D2937, 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. (186 sq. m) 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 each 100 feet (30 m) 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 each 150 feet (46 m) or less of trench length, but no fewer than two tests.
- E. 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 to depth required; recompact and retest until specified compaction is obtained.

### 3.09 CLEANING:

- A. After completion of the building, all surplus materials, rubbish and debris **SHALL BE REMOVED FROM THE SITE.** No dumping permitted on the site. Leave site in clean and neat condition.

END OF SECTION

## TRENCHING, BACKFILL AND COMPACTING

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all labor, superintendence, materials, tools, transportation, and equipment and all means of construction necessary and reasonably incidental to complete the work as specified herein and as shown on the Contract Drawings.
- B. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.
- C. The work of this section includes, but is not limited to, the following: excavation, shoring, sheeting, dewatering, trenching, stabilization, pipe bedding, backfilling, roadway repaving, and surface restoration for all piping systems shown on the Contract Drawings.
- D. Contractor shall obtain all permits for work in or along roads. Work materials and methods shall conform with all requirements of the governing body having jurisdiction over the roadway.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Pipe as shown on Drawings and as specified.
- B. Granular backfill used for trench stabilization and pipe bedding shall conform to the following gradation requirements. Existing grade shall be brought up to the desired elevations with a granular type soil that complies with the following sieve size and percent by weight:

<u>SEIVE SIZE</u>	<u>PERCENT BY WEIGHT PASSING MESH SIEVE</u>
2"	100
¾"	70-100
#4	30-80
#50	10-35
#200	5-12

- C. Broken stone or washed gravel shall have clean, hard, strong, durable, uncoated particles free from injurious amounts of soft, friable, thin, elongated or laminated pieces, alkali, organic or other deleterious matter. When subjected to the ASTM C-88 soundness test, there shall be no signs of checking, cracking, or disintegrating.
- D. Select materials shall be the native soil excavated from the trench free of rocks, foreign materials and frozen earth.

## PART 3 - EXECUTION

### 3.1 WORKMANSHIP

#### A. Excavation:

1. Topsoil shall be scrapped from all areas of excavation and placed in stockpiles where designated by the Engineer.
2. Pipe trenches shall be excavated along lines shown on the Contract Drawings and to require depths, the width at the trench bottom being equal to the diameter of the pipe, plus twenty-four inches (24"). When required, the trench width can be increased, but shall not be greater than necessary for proper installation. Excavation shall allow for the placing of a layer of granular backfill (clean fill dirt or sand) free of debris and containing no large stones or rocks. Maximum particle size of stones shall be one-half inch (1/2") in diameter.
3. The Contractor shall carefully support and protect from injury all existing water pipes, electric conduits, sanitary and storm sewer lines and other structures, which do not have to be changed in their location. In case of injury or temporary removal, these facilities shall be restored to as satisfactory conditions as that in which they were found, at the Contractor's expense.

#### B. Materials Excavated:

1. The excavated materials shall be laid compactly on the side of the trench and at a distance from the centerline of the trench and at a distance from the centerline of the trench so as not to cause a failure of the trench wall or trench bottom, and shall be kept trimmed up so as to be of as little inconvenience as possible. Concrete and asphalt paving material shall be stripped ahead of the trench excavation, loaded onto trucks, and removed from the work area prior to full excavation of the trench. Roads shall be kept open for travel unless otherwise directed by the Engineer.
2. The Contractor shall not remove from the line of work any sand, gravel, or earth excavated there from which may be suitable for backfilling the trench, until the same has been refilled. All materials excavated shall be considered as property of the Owner.
3. Surplus excavation shall be deposited at locations shown on the Contract Drawings or designated by the Engineer. The locations to which the excavated material is delivered shall be known as the "Owner's Stock Pile".

#### C. Removal of Water:

1. The Contractor shall at all times during the construction, provide and maintain ample means and devices with which he shall promptly remove and properly dispose of all water or sewage entering the excavation or other parts of the work, and keep the excavation and structures dry until all



work is completed.

2. The Contractor shall dispose of the water from the trenches and excavations in a suitable manner without damage to adjacent areas. The Contractor shall furnish all necessary machinery, power and labor to pump, bail or otherwise remove water which may be found or shall accumulate in the trenches or other excavations and shall perform all work necessary to keep them clear of water while work is under construction.
3. Groundwater and subsoil conditions along the line of work are such that the Contractor cannot successfully control the water and provide a stable hard trench bottom for the pipe lines by ordinary pumping and bailing, the Contractor shall furnish and provide the necessary equipment, power and labor to employ the well point method of trench dewatering, without additional cost to the Owner.

D. Pipe Bedding:

1. In the event a trench is excavated below the specified grade, it shall be backfilled to grade with selected materials and shall be thoroughly compacted, without additional compensation.
2. Excavated materials may be reused, if approved by the Engineer.
3. In wet or unstable locations where the trench bottom is unsuitable for laying pipe, the excavation shall be carried to a greater depth and backfilled as shown on the pipe bedding details of the Contract Drawings. Unless indicated otherwise by the Engineer, all concrete pipe bedding shall be ASCE (Class "B"), ductile iron pipe bedding per AWWA C-600 type 4 and plastic sewer pipe per ASTM D2321.

E. Pipelaying:

1. Inspection and Quality of Pipe. Each pipe, branch, or special fitting shall be carefully inspected, and those not meeting the Specifications, or which have been broken or damaged in handling or transportation, or which are otherwise defective, shall be rejected and removed from the work. In addition to the inspection to be made by the Engineer, the Contractor shall carefully examine, for himself, all pipe and special fittings before placing the same in the trench. Such inspection shall carry with it full responsibility, on the part of the Contractor, for the removal of all pipe, branches, or special fittings found to be defective.
2. Grade and Alignment. Pipe shall be set at the grade and alignment shown on the Contract Drawings or as approved by the Engineer.
3. Protection of Work. Care shall be exercised in the protection of finished work. The Contractor shall take such precautions as may be necessary while in the act of laying the pipe, in backfilling, or in the passage of workmen up and down the trench. At all times during which pipe is not being laid, the end of the pipe shall be sealed, except where special

permission has been given for the drainage of trench water.

F. Backfilling:

1. Backfilling shall be accomplished in the following manner, causing no damage to the pipe.
  - a. Backfill material shall be granular material free from debris containing no large stones or rocks.
  - b. Backfill and bedding in the pipe zone shall be as indicated on the Embedment Details.
  - c. The balance of the trench shall be backfilled, in layers not exceeding eight inches (8") in thickness, and carefully compacted with mechanical tampers, to the satisfaction of the Engineer.
  - d. All trenches under pavement, sidewalks or roads shall be backfilled and compacted to not less than 95% proctor density, as determined by AAHTO method T99 for compaction and density of soils.
2. The Contractor shall be responsible for the acceptable compaction of all trench areas. As settlement occurs, the Contractor shall refill and regrade, with suitable material, and maintain same.
3. Backfilling shall include all backfilling, ramming or rolling as required, the regrading of adjacent disturbed areas, the replacing of drains and other surface and subsurface structures, the placing and maintaining of temporary walkways and driveways.
4. It is the intent of the previous requirements for the backfilling of trenches to specify methods which will: (1) result in thorough compaction of the backfilled material without displacement of the grade or alignment of all utility lines and appurtenances, (2) minimize settlement of the backfilled material, and (3) assure a sound foundation.

G. Compaction:

1. All backfill and fill materials should be compacted to the degree noted in the following table in accordance with ASTM D-698 latest standard.

<u>BUILDING AREA</u>	<u>%MAXIMUM DRY DENSITY (ASTM D-698)</u>
Supporting Foundations	98%
Supporting Floor Slabs	95%
Pavements	95%
Site (Non Loading Bearing)	90%

H. Cleaning:

1. As soon as the trenches have been refilled and trench surfaces restored, construction debris, or other refuse material of whatever description, deposited and left by the Contractor on the rights-of-way shall be removed.
2. The Contractor shall thoroughly flush such pipes as may be designated by the Engineer, to remove all foreign material which may have entered during construction. The expense of flushing shall be borne by the Contractor.

END OF SECTION

## SITE CLEARING

### PART 1 GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all labor, superintendence, materials, tools, transportation, and equipment and all means of construction necessary and reasonably incidental to complete the work as specified herein and as shown on the Contract Drawings.
- B. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.
- C. Work includes site preparation including tree protection, preparation for removal of existing utilities, temporary erosion and sedimentation control, and general site improvements as well as clearing, grubbing, and stripping of the construction site of all vegetation, trees, rubbish topsoil and other surface materials as shown on the Contract Drawings, as designated necessary by the Engineer, or as required by the Contractor to perform the work.
- D. In order to control dust, as often as required during each working day, and particularly prior to the conclusion of each working day, areas under immediate construction (including access roads and other areas affected thereby) shall be swept and wet down with water sufficiently to lay dust. In addition, these areas shall be wet down during non-working hours (including weekends) as often as required to keep the dust under control. The use of calcium chloride or petroleum products or other chemicals for dust control is prohibited.
- E. If or when required to install piping as required by the Contract Documents, several interfering items shall temporarily be removed during construction and replaced following construction. Whether indicated by the Contract Documents or not, these items include the removal of interfering fencing, the demolition of interfering concrete pavement, and the relocation of interfering sheds. These items are to then be replaced following construction of the pipe.
- F. Site Clearing shall also be in accordance with NJDOT Specifications Section 201 including the following:

Clearing Site shall also include removal and/or resetting of lawn decorations; minor yard structures; or similar obstructions at the site of work. If there should be no separate item provided for in the proposal, Clearing Site shall also include removal and/or resetting and/or replacement of any fences, decorative shrubs, hedges or trees at the work site. Clearing Site shall also include the removal of tree stumps, underbrush, clearing of wooded areas as shown on the Drawings or any unsuitable or undesirable obstructions in the area of any of the scheduled items or work.

Clearing Site shall also include resetting of monuments, meters, boxes, and any other work not actually listed in the schedule of items in the proposal which is required for the completion of work as described by the Drawings and the contract documents.

Clearing Site shall also include resetting roof drains at curb locations if the proposed roadway gutterline grade is higher than the roof drain invert elevation.

Responsibility for resetting gas valves and boxes shall lie with the respective utility company, however it shall be the Contractor's responsibility to coordinate this work.

Clearing Site shall also include the removal and resetting of all obstructions, either standing or felled, within the limits of construction and for which payment is not otherwise provided in the contract but which is described for removal and resetting on the Drawings by the Engineer during construction.

Clearing Site shall also include Relocation of Sewer Vent/Lateral and Relocation of Water Meter. Relocation of Sewer Vent/Lateral and Relocation of Water Meter shall not apply to resetting vertical grade, but when lateral relocation is required due to road widening.

## 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

## 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. References:
  - 1. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications).
    - a. Section 201: Clearing Site

## 1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

## 1.5 PROJECT 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 authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing. Refer to site utility Plan.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT

- A. Provide all equipment, materials labor and transportation necessary to perform the work of clearing, grubbing and stripping the construction site.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 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 requirements of authorities having jurisdiction.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during

construction until permanent vegetation has been established.

- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

### 3.3 TREE PROTECTION

- A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

### 3.4 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
  - 1. Arrange with utility companies to shut off indicated utilities.
- B. 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.

### 3.5 CLEARING

- A. The construction site shall be cleared within the limits of clearing (construction) as shown on the Contract Drawings. The ground surface shall be cleared of all trees, brush, weeds, roots, debris and other unsuitable matter.
- B. The Contractor shall remove only those shrubs and trees as designated by the Engineer. All remaining shrubs and trees shall be fully protected by the Contractor and, if damaged or destroyed, shall be replaced in kind at the Contractor's expense.
- C. When or where any direct or indirect damage or injury is done to public or private property by, or on account of, any act, omission, neglect or misconduct on the part of the Contractor in the execution of the work, such property shall be restored by the Contractor, at his expense, to a condition equal to that existing before such damage or injury was done or he shall make good such damage or injury in such other manner as may be acceptable to the Engineer.

- D. If a separate item is not provided for the removal and/or relocation of hedges fences, and privately owned signs, the Contractor shall be responsible to contact the owner of said hedge, shrub, fence or sign to determine if the owner desires to reclaim it. If the owner should desire to reclaim the item, the Contractor shall then use reasonable care and relocate and reset the item beyond the work limits.
- E. Should any construction methods that are required for the work included under Clearing Site not specifically described, they shall comply with the applicable provisions of the previously cited Standard Specifications.
- F. All materials accumulated during the clearing of the site described above, or any excess materials, shall be disposed of by the Contractor at a New Jersey Department of Environmental Protection approved landfill site, to be provided by the Contractor.
- G. Burning of debris at the project site, or in the vicinity thereof, will not be allowed.

### 3.6 GRUBBING

- A. Grubbing shall be performed in all construction areas and/or where indicated on the Contract Drawings.
- B. Stumps shall be removed in their entirety.
- C. Roots and matted roots shall be grubbed out to not less than eighteen (18) inches below the existing surface or eighteen (18) inches below the bottom of all excavations, whichever is lower.

### 3.7 STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

### 3.8 DISPOSAL

- A. Cleared materials declared unsuitable for use in the project, by the Engineer shall be promptly removed from the site by the Contractor, and at the Contractor's expense.
- B. All off-site disposal shall be in accordance with local and State regulations. Burning of cleared materials will not be permitted on site.
- C. Contractor shall secure Engineer's written approval of disposal site or sites prior to



the removal of any material from the site of the work.

- D. Excess excavated material which is not considered to be solid waste pursuant to N.J.A.C. 7:26-1.6 shall be graded on-site only to the extent needed to achieve preconstruction grade, unless otherwise specifically approved by the Department. The project sponsor shall ensure that the contractor removes the remainder from the site and disposes of it at a site approved by the project sponsor in accordance with the following:
1. Disposal sites selected by the contractor shall be evaluated and approved by the project sponsor prior to their use. Disposal sites may also be selected by the project sponsor. The project sponsor shall conduct periodic inspection of disposal sites to ensure compliance with the requirements of this subsection during the off-site disposal operation.
  2. The disposal of excess excavated material in wetlands, stream corridors and floodplains is strictly prohibited, even if the permission of the property owners is obtained. The contractor shall be responsible to remove and fill improperly place by the contractor at the contractor's expense and restore the area impacted.
  3. If excess excavated material is placed on private property, a hold harmless release in favor of the project sponsor and the Department shall be obtained from the property owner.
  4. Prior to approval of a site for excess excavated material disposal, where the site exceeds 5,000 square feet, the project sponsor shall obtain, or shall ensure that the contractor or property owner has obtained, the appropriate certification of the soil erosion and sediment control plan in accordance with the State's standards for soil conservation (N.J.A.S. 4:24-1 et seq, also refereed to as Chapter 251). Where the site is less than 5,000 square feet, the project sponsor shall advise the property owner of the need for erosion and sediment control and obtain a statement that the property owner accepts complete responsibility for implementations of appropriate methods to prevent erosion and sedimentation.

### 3.9 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

### 3.10 TEMPORARY SITE CLEARING

- A. Temporarily remove all structures interfering with the construction of the stormwater drainage pipe, including the removal of fencing, the demolition of concrete pavement, and the relocation of sheds.
- B. These items shall be replaced following completed construction of the relevant section of stormwater drainage piping. Item replacement includes replacing the

removed fencing, replacing the demolished concrete, and moving the relocated sheds back to their original locations.

- C. Following construction, the Contractor shall restore the site to a condition equal to at least the existing condition.

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

- A. Site Clearing and all related work will not be measured for payment but shall be included in the lump sum cost of the proposal, including preparation, temporary soil erosion and sediment control, tree protection, utilities, clearing, grubbing, stripping, disposal, site improvements, excavation, compaction, backfill, restoration, dust control, and temporary site clearing.

END OF SECTION

## SELECTIVE CLEARING

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Selective Clearing shall be performed by the Contractor in the area designated in the Contract Drawings corresponding to the 50' wetlands buffer.
- B. The designated selective site clearing area is reserved only for the clearing of dead trees as directed by the Engineer and as permitted by N.J.A.C. 7:13-7.1 Permit-By-Rule 1 – Normal Property Maintenance. The Contractor shall not clear past the limit of clearing unless otherwise directed to do so by the Engineer.
- C. Provide all labor, superintendence, materials, tools, transportation, equipment and all means of construction necessary and reasonably incidental to the Selective Clearing
- C. All materials and labor obviously a part of the work, and as necessary for proper selective clearing, although not specifically indicated in the Contract Documents and/or in the specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

#### 1.2 QUALITY ASSURANCE

- A. Comply with governing codes and regulations.
- B. References:
  - 1. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications).
    - a. Section 801: Selective Vegetation Removal
    - b. Section 802: Trimming and Removing Trees
    - c. Section 804: Topsoil Spreading

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Topsoil, where required for restoration, shall conform to Section 804: Topsoil Spreading, of the NJDOT Specifications.

### PART 3 EXECUTION

#### 3.1 CONSTRUCTION

- A. Selective Clearing, Tree Removal shall conform to NJDOT Specification Section 801.03.02.

- B. Where overhead wires exist in the area of trees to be removed, the Contractor shall coordinate his work with the utility companies having jurisdiction.
- C. Any damage to other vegetation, structures, utility wires or other property shall be repaired without additional compensation.
- D. All branches, limbs, trunks and other debris resulting from tree removal shall be disposed of.

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

Selective Clearing, Tree Removal, Topsoil restoration, and all work required for or incidental thereof shall not be measured for payment but shall be included under the lump sum cost of the proposal.

END OF SECTION

## EARTH MOVING

### 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. Excavating and filling for rough grading the Site.
  - 2. Preparing subgrades for slabs-on-grade, pavements, and walks.
  - 3. Excavating and backfilling for buildings and structures.
  - 4. Drainage course for concrete slabs-on-grade.
  - 5. Subbase course for concrete walks.
  - 6. Excavating and backfilling trenches for utilities and pits for buried utility structures.
- B. Related Sections:
  - 1. Section 033000 "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
  - 2. Section 310000 "Earthwork" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

#### 1.3 DEFINITIONS

- A. Backfill: Soil 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. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- E. 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 Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  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 Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- F. Fill: Soil materials used to raise existing grades.
- G. 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.
- H. 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.
- I. 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.
- J. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

#### 1.4 FIELD CONDITIONS

- A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
1. Classification according to ASTM D 2487.
  2. Laboratory compaction curve according to ASTM D 698 or ASTM D 1557.

#### 1.6 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Contractor to retain services of an agency qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

#### 1.7 PROJECT 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. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.
- C. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Section 312500 "Erosion and Sedimentation Controls," and Section 311000 "Site Clearing," are in place.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
  - 1. Unsatisfactory soils also include satisfactory 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; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- F. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- G. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100

percent passing a 1-1/2-inch (37.5-mm) sieve and zero to 5 percent passing a No. 8 (2.36-mm) sieve.

- H. 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 (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.
- I. Sand: ASTM C 33; fine aggregate.
- J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state

## PART 3 - EXECUTION

### 3.1 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.

### 3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. 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.

### 3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.



1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

### 3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). 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. 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.

### 3.6 EXCAVATION FOR WALKS AND PAVEMENTS

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

### 3.7 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 (300 mm) higher than top of pipe or conduit unless otherwise indicated.
- 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 (150 mm) in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  2. For pipes and conduit 6 inches (150 mm) 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 (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

### 3.8 SUBGRADE INSPECTION

- A. Notify Testing Agency when excavations have reached required subgrade.
- B. If Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slab with a pneumatic-tired dump truck 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.
  2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Testing Agency, and replace with compacted backfill or fill as directed.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

### 3.9 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 (17.2 MPa), may be used when approved by Architect.
  1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

### 3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory 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.

### 3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, 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.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.12 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 (450 mm) of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Initial Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the pipe or conduit.

1. 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.

E. Final Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

### 3.13 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory 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.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

### 3.14 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 satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

### 3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment and not more than 4 inches (100 mm) 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 D698:
  - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill soil material at 95 percent.
  - 2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 92 percent.
  - 3. Under turf or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percent.
  - 4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

### 3.16 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 (25 mm).
  - 2. Walks: Plus or minus 1 inch (25 mm).

3. Pavements: Plus or minus 1/2 inch (13 mm).
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch (13 mm) when tested with a 10-foot (3-m) straightedge.

### 3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course under pavements and walks as follows:
  1. Shape subbase course to required crown elevations and cross-slope grades.
  2. Place subbase course 6 inches (150 mm) or less in compacted thickness in a single layer.
  3. Place subbase course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
  4. Compact subbase 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

### 3.18 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-on-grade as follows:
  1. Place drainage course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
  2. 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 D698.

### 3.19 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified geotechnical engineering testing agency to perform tests and inspections. Testing performed by Owner's agency does not supersede requirement for Contractor to engage an independent testing agency to confirm compliance with project requirements.
- B. Allow Owner's 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.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed by Contractor's agency 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 Architect.

- D. When Contractor's or Owner's 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.

### 3.20 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 Architect; 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.

### 3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

## GRADING

### PART 1 GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all labor, superintendence, materials, tools, transportation, and equipment and all means of construction necessary and reasonably incidental to complete the work as specified herein and as shown on the Contract Drawings.
- B. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.
- C. The work includes, but is not limited to:
  - 1. Excavation, grading, backfilling and compaction for construction required to complete the work of this contract. Contractor shall be responsible for making excavations in a safe manner, and shall provide as necessary all shoring and sheeting.
  - 2. Construction and maintenance of Owners' stockpiles including soil erosion and sediment control measures.
  - 3. Dewatering materials and work including temporary site and roadway drainage necessary for construction, drainage of access roads, and adjacent areas affected by the Contractor's operations.
  - 4. Backfills, as required to backfill construction excavations.
  - 5. Compaction of backfills as specified and including compaction tests.
- D. Work for Rough Grading for Site Improvements consists of, but is not limited to, the following:
  - 1. Perform onsite cutting and filling work, keying and benching, underdrain construction, earth moving and land balance required to approximate sub-grades.
  - 2. Compaction of site areas in native soil, cut, fill, or topsoil.
  - 3. Removal from the site of any excess material, if applicable.
  - 4. Obtain and transport to the site any needed borrow material, if applicable.
  - 5. Excavation and disposal from the site of any unacceptable rock, organically contaminated, deleterious and unsuitable material, as applicable.
- E. Work for Fine Grading for Site Improvements consists of, but is not limited to, the following:

1. Perform fine grading and compaction to meet indicated sub-grades.

## 1.2 QUALITY CONTROL

- A. Contractor shall provide supervision, inspection, sampling, testing and other work of similar import as required to insure meeting all requirements of the specifications.
- B. Approval shall be obtained before delivery of materials or equipment to the project site.
- C. The Engineer has the authority to halt all work until measures are taken by the Contractor to meet the specified standards.

### Applicable Standards:

ASTM - D1557	Moisture-Density Relationship of Soils
ASTM - T27	Sieve Analysis
ASTM - D1556	Test for Density of Soil in Place by the Sand-Cone Method
ASTM - D698	Maximum Dry Density

- D. The Owner may engage the services of an approved testing laboratory to sample, analyze and provide reports of materials, and to perform soil compaction tests as Owner deems necessary to satisfactorily demonstrate that compaction requirements of the Specifications have been met. The Contractor shall fully cooperate with the Engineer and the Owner in this regard. Contractor shall pay for all tests.

## 1.4 SUBMITTALS

- A. Samples of all materials proposed to be used for backfill, including excavated Owner's material shall be submitted to, and the material as well as its use approved by the Engineer before the backfill work begins.
- B. Contractor shall submit to the Engineer for approval the name of laboratory he proposes to employ for testing purposes, and shall obtain approval before starting the work of this section.
- C. Catalog and Manufacturers data sheets shall be submitted for all compaction equipment.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Backfill material shall be clean granular soil free from organic impurities and other objectionable materials.
- B. Material used for backfill when compacted shall produce a strong and relatively incompressible soil mass free of detrimental voids.



- C. Backfill shall be performed using excavated material which has previously been approved by the Engineer as suitable for use as backfill.
- D. Borrow material required for Site Improvements shall be Soil Aggregate designation I-13 and conform to Section 901.11 of the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 (NJDOT Specifications).

PART 3 EXECUTION

3.1 EXCAVATION

- A. Top soil shall be scraped from all areas of excavation and deposited at locations as directed by the Engineer. The locations to which the topsoil is delivered shall be known as the "Owner's Stockpile".
- B. Excavations shall be kept free from water while construction therein is in progress.
- C. All sloughage shall be removed and shall not be allowed to become mixed with the backfill. All cavities caused by slope sloughage shall be refilled and compacted as herein specified to at least 98 percent dry density in accordance with ASTM – D698, all at no cost to the Owner.
- D. Excavations deeper than five feet (5') shall have the sides sheeted or shored, or shall have the sides sloped back to the angle of repose of the materials, in accordance with applicable OSHA and New Jersey Department of Labor and Industry requirements.
- E. Excavation adjacent to existing roadway structures, utilities, or existing underground piping shall be properly sheeted and braced. The Contractor shall protect and support, in a suitable manner, all piping and aerial or underground utilities affected by his operations. Any damage to said piping or utilities shall be repaired by the Contractor, at his expense.
- F. Contractor shall consider all excavations as unclassified and shall complete the excavation regardless of the type, nature or condition of the materials encountered.
- G. The bases of excavation shall be compacted in the same manner as backfills.

3.2 COMPACTION

- A. All backfill and fill materials should be compacted to the degree noted in the following table in accordance with ASTM D-698 latest standard.

<u>BUILDING AREA</u>	<u>%MAXIMUM DRY DENSITY (ASTM D-698)</u>
Supporting Foundations	98%
Supporting Floor Slabs	95%
Pavements	95%
Site (Non Loading Bearing)	90%

3.3 DEWATERING

- A. Provide and maintain, through the use of dewatering wells, at all times during construction, ample pumping equipment ready for immediate use to pump, or otherwise promptly remove and dispose of water entering or accumulating in excavations, and to keep same clear of water.
- B. Should groundwater and subsoil conditions be such that removal of water from the excavation cannot be successfully handled by ordinary means of pumping and bailing, and where directed by the Engineer, other methods of dewatering shall be employed and adequate equipment, pumps and labor provided to dewater and maintain the excavations in dry condition without additional compensation. When water is removed from the trenches, it shall be discharged through pipes, troughs, gutters or other artificial means to a point of proper disposal such as catch basins, or approved locations adjoin the Work. Water shall not be directly discharged to streams or other watercourses.
- C. To allow sediment to settle out of water that interferes with construction before such water enters any surface waters, dewatering operations shall direct pumpage as far from the surface waters as possible. Care should be taken not to damage or kill vegetation by excessive watering or by damaging silt accumulation in the discharge area. Settling basins shall be constructed and used as necessary to protect vegetation and to achieve environmental objectives.
- D. Upon completion of the section wherein the operations have been performed, the Contractor shall remove from the catch basins, sumps, ditches, or watercourses, all mud, silt, debris and other accumulations discharged to these various locations. The Contractor is responsible for leaving them in a condition similar to that which existed prior to his operations. Proper control measures shall be employed, so as to minimize siltation and erosion in and adjacent to the area of the Work.
- E. Dewatering shall continue on a 24 hour per day basis as required to avoid flotation danger to the structures until completed.

#### 3.4 BACKFILL PLACEMENT

- A. Backfill shall be accomplished using material from the Owner's stockpiles.
- B. Materials shall be placed to sufficient height and width so that after full shrinkage, sloughing of slopes or subsidence of the filled area, and completion of paving or landscaping the elevation and width shall conform to the elevation, grades and cross sections shown on the Drawings, or that existed before the start of work under this Contract.
- C. Backfill material shall be placed in layers not more than eight (8") inches thick, loose measurement, and each layer compacted as described herein.
- D. Before placing materials, the ground shall be broken to bind the fill.
- E. Frozen materials shall not be placed.
- F. When any fill which has obtained settlement requires additional material to bring it

to required elevation, it shall be scarified before additional material is placed.

- G. The Contractor shall be responsible for the stability of all fill and shall replace all sections damaged or displaced due to carelessness or neglect on the part of the Contractor, or due to natural causes.
- H. The perimeter banks of newly placed fill shall be stabilized to prevent the fill from spoiling the adjacent area.

### 3.5 BACKFILL AT STRUCTURES

- A. Upon completion and final inspection of subgrade and concrete construction, all debris shall be removed from the excavation and same backfilled with select material.
- B. Old wood, old forms, etc., shall be removed before backfilling is started.
- C. Backfilling shall be performed as required around all work. Backfilling shall be done as soon as other work will permit, with the approval of the Engineer. It shall be deposited in layers of earth no more than eight (8") inches in depth and each layer shall be compacted to 98% of optimum density of ASTM D-698 standard.
- D. Contractor is responsible for all damage to any structures or facilities due to backfilling.

### 3.6 WORKMANSHIP

- A. Excavated materials shall be placed, as designated, by the Engineer. Ingress and egress to existing roads and buildings must be maintained at all times.
- B. The Contractor shall be aware that all areas shall be restored to their original conditions, unless changed by the Contract Drawings or the Specifications.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 MEASUREMENT

- A. All work required for and incidental to the completion of site grading as required for site improvements will not be measured for payment but shall be included under the lump sum cost of the proposal, including excavation, compaction, backfill, dewatering, debris removal, stockpile upkeep and maintenance, and soil erosion and sedimentation control measures.

END OF SECTION

# DEWATERING

## PART 1 GENERAL

### 1.1 SUMMARY

- A. Provide dewatering for construction activities.

### 1.2 SUBMITTALS

- A. Shop Drawings: Submit for approval plan showing layout of dewatering system.
- B. Test Reports: Submit observation well reports recording groundwater levels.

### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Use experienced workers.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Dewatering Systems:
  - 1. Manufacturers:
    - American Drainage Systems Inc.
    - Ashbrook Corp.
    - Crumpler Plastic Pipe, Inc.
    - McLanahan Corp.
    - US Filter Dewatering Systems Group
  - 2. Application: Dewatering of excavated areas.
  - 3. Service: Systems for groundwater control and disposal.

## PART 3 EXECUTION

### 3.1 DEWATERING ACTIVITIES

- A. Dewatering Applications:
  - 1. Lowering and controlling groundwater levels during excavation and construction.
  - 2. Control of hydrostatic pressures during excavation and construction.
  - 3. Control of surface and subsurface water, ice, and snow related to dewatering.
  - 4. Standby equipment for system back-up.
  - 5. Establishment and monitoring of observation wells
  - 6. Legal disposal of water removed from excavations
  - 7. Removal of observation wells when no longer required.

B. Observation Wells:

1. Provide, take measurements, and maintain observation wells indicated and additional observation wells as may be required by governing authorities.
2. Remove observation wells when dewatering is completed.

C. Dewatering:

1. Provide a system to lower and control groundwater in order to permit construction activities. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, and other excavations.
2. Operate dewatering system continuously until dewatering is no longer required. Dispose of water removed from excavations in a manner to avoid endangering public health, property, and portions of work under construction or completed. Provide flow control devices as required by governing authorities.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 MEASUREMENT

- A. Separate payment will not be made for dewatering activities, including all work required for and incidental to the completion thereof. All costs thereof shall be included in the lump sum cost of the proposal.

END OF SECTION

## EROSION AND SEDIMENTATION CONTROLS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Complete soil erosion and sedimentation controls as detailed on the Contract Drawings and as specified herein.
- B. Provide all labor, superintendence, materials, tools, transportation, equipment and all means of construction necessary and reasonably incidental to the installation of erosion control and sedimentation controls.
- C. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated in the Contract Documents and/or in the specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

#### 1.2 WORK INCLUDED

- A. The Contractor shall be responsible for the construction, implementation, and maintenance of all soil erosion and sediment control measures necessary to minimize damage to surface waters and wetlands.
- B. Soil erosion and sediment control measures shall be constructed in accordance with "Standards for Soil Erosion and Sediment Control in New Jersey," latest revision. The soil erosion and sediment control measures indicated are the minimum control measures to be instituted during the term of the project.
- C. Additional control measures as may be required by the Certified Soil Erosion and Sediment Control Plan, as well as those which may be imposed by Federal, State and local construction permits, shall apply. Fees for this permit(s) shall be the responsibility of the Contract and shall be included in the total price bid.
- D. All construction debris, excess excavated material and refuse incidental to this project shall be removed entirely from the site by the Contractor and properly disposed of in a legal manner. Insofar as practicable, existing vegetation shall be preserved and site preparation activities shall be planned to minimize the area and duration of soil disruption.
- E. Costs associated with other work of this Section shall be included in the price bid for the item of which it is a component.
- F. Per N.J.A.C. 7:22-10.11(k)2, Sewer inlets within construction areas shall be provided with inlet protection in the form of a perimeter crushed stone collar and perforated wooden boards held together by hinges, or other appropriate siltation control measures.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Crushed Stone shall be three (3) to four (4) inch angular stone with sharp edges, clean and free of clay, stone dust or other objectionable materials.
- B. Fertilizer shall be 10-20-10 or equal.
- C. Filter Fabric for low point inlets shall be Laurel Erosion Control Cloth Type II by advanced Construction Specialties Company of Memphis, Tenn., or Poly Filter-X by Carthage Mills of Cincinnati, Ohio or other approved equal.
- D. Filter-Gravel shall be washed gravel, free of clay organic and other objectionable foreign material.
- E. Limestone shall be pulverized dolomitic.
- F. Mulch materials shall be unrotted salt hay, hay, or small grain straw.
- G. Mulch Binders shall be synthetic or organic such as Curasol DCA-70, Petro-set or Terra-Tack I or other approved equal.
- H. Seed Mixtures shall be labeled to show compliance with the requirements of the New Jersey State Seed Law and shall have been tested within six (6) months preceding the date of sowing. The kinds and amounts shall be as indicated on the contract drawings.
- I. Silt Fence metal fence mesh six (6) inches or smaller, with a filter fabric such as ProPex Silt Stop, or approved equal fastened to fence posts.
- J. Stone Berms shall be constructed of six (6) inch nominal diameter stones (150 lbs/cu. ft.) which are free of sediment, organic and other objectionable foreign matter.
- K. Topsoil shall be friable and loamy, free of debris objectionable weeds, stones and toxic substances that may be harmful to plant growth.
- L. Erosion Control Mats shall consist of mats or blankets held together by stakes and staples, and overlapping to provide full coverage of the underlying soil.
- M. Construction Entrances shall consist of minimum six (6) inches of ASTM C-22 No.2 or No.3 stone atop a geotextile fabric and must be cleaned or replaced as needed.
- N. Scour Holes shall be lined with rip-rap with stone size (d50) of six (6) inches, and constructed in accordance with discharge demands.

## PART 3 EXECUTION

### 3.1 GENERAL

A. On-site Traffic Control. The Contractor shall establish control for on-site construction traffic in order to minimize land disturbance in any area where vehicular traffic disturbs the land to the extent of reducing protective vegetation, compacting soil or otherwise deteriorating the environment.

B. Vegetative Cover. Stabilization with vegetative cover shall be performed only during the periods February 15 to May 1 and August 15 to October 15. In the event that seeding cannot occur during these periods, the Contractor shall temporarily stabilize disturbed areas with anchored mulch.

1. Temporary Vegetative Cover: In the event the construction is halted for periods greater than 14 days, areas disturbed by construction shall be stabilized by seeding in accordance with N.J.A.C. 7:22-10.11(3)C. Prior to the seeding operation, disturbed areas shall be graded as needed and feasible to permit the use of conventional equipment for seedbed preparation.

2. Permanent Vegetative Cover: The Contractor shall be responsible for the establishment of permanent vegetative cover on all areas where the soil has been disturbed by construction activities. Permanent vegetation is to be seeded or sodded on a completed project area within seven (7) days after final grading in accordance with N.J.A.C. 7:22-10.11(3)c.

3. Seed Application: Seeding shall be performed by hand, cyclone seeder, drill cultipack type seeder, or hydro-seeder. For seed applications other than by hydroseeder, normal seed depth shall be from one-fourth (1/4) inch to one-half (1/2) inch. Hydroseedings which are mulched may be left on the soil surface. Following all seeding, mulch shall be placed and anchored.

4. In the event that construction will be halted for periods greater than thirty (30) days

C. Tree Protection During Construction. The Contractor shall be responsible for marking the trees to be saved. Trees within 25 feet of the construction site shall be boxed or fenced at the drip line of the branches. Boards are not to be nailed to trees during construction nor are feeder roots to be cut inside the drip line of the branches. Damaged trunks, exposed roots, and areas where limbs have been removed shall be promptly painted with a good grade of "tree paint". Removal of limbs shall be done flush to the trunk or main branch.

D. Structural Measures. Contractor shall construct, silt fence sediment barriers; stone berms and inlet filters as required to prevent the flow and/or erosion of soil from the site.



### 3.2 TOPSOILING

- A. Following completion of construction activities, the Contractor shall prepare areas to be permanently stabilized with grass by applying topsoil to a uniform depth of four (4) to six (6) inches. Topsoil shall be as herein specified. Immediately prior to topsoil applications, the soil surface should be scarified to provide a good bond with the topsoil.
- B. The cost for installing topsoil includes importing Borrow Topsoil if there is an inadequate supply of natural topsoil on site.

### 3.3 SEEDBED PREPARATION

- A. Contractor shall sample soils to determine the soil pH and will maintain a soil pH of 6, 8 to 7. Any soil having a pH 4 or less or containing iron sulfides must be covered with a minimum of 12 inches of soil having a pH of five or more before seedbed preparation.
- B. Immediately following application of topsoil, the Contractor shall apply pulverized dolomitic limestone at a rate of two (2) tons per acre, and fertilizer (10-20-10) at a rate of 500 pounds per acre. The Contractor shall then work lime and fertilizer into the soil to a depth of four (4) inches with a disc. springtooth harrow, or other suitable equipment.
- C. If seeding is to be performed with a hydroseeder, lime and fertilizer may be applied in the hydroseeding slurry with seed and water. Mulch shall be applied after applying the slurry mixture as specified herein.
- D. Following application of lime and fertilizer, the area shall be rolled to firm the seedbed and all stones two (2) inches or larger and any other unsuitable material shall be removed. If traffic has compacted the soil, the area shall be retilled and firmed.

### 3.4 SEEDING

- A. Seed application shall be made during optimum planting periods and immediately following preparation of the seedbed.
- B. Seed mixtures shall be applied uniformly.

### 3.5 MULCHING

- A. The Contractor shall apply straw mulch to all newly seeded areas immediately following seeding and to all disturbed areas if stabilization by seeding cannot occur as herein specified.

### 3.6 LOW POINT INLET PROTECTION

- A. The Contractor shall protect all Low Point Storm Drain Inlets with temporary Low Point Inlet Filters to remove sediment from storm runoff. Construction of the Low Point Inlet Filters shall be as shown in the Contract Drawings.

- B. The Contractor shall wrap any existing or new grates which can receive runoff from the site at the storm water inlet with filter fabric (40 EOS).
- C. The filter and grate shall then be covered with pea gravel filter material to a thickness of at least six (6) inches at the grate center, gradually thinning out to the margin of stone placement, as specified and shown.
- D. The Contractor shall be responsible for maintaining the Low Point Inlet Filters in good condition. The Contractor shall also be responsible for removing the Low Point Inlet filters after, in the opinion of the Engineer, stabilization of upstream contributory areas is achieved.

### 3.7 CURB INLET PROTECTION

- A. The Contractor shall protect all existing curb and storm drains with temporary curb inlet filters to remove sediments from storm runoff. Construction of the Curb Inlet Protection Filters shall be as shown in the Contract Drawings.
- B. Hardware cloth or comparable wire mesh with 1/2 inch openings shall be placed over the existing curb inlet opening so that a minimum of twelve (12) inches of the wire mesh extends across the inlet cover and at least twelve (12) inches of wire extends across the concrete gutter from the inlet opening. Two (2) to three (3) inch, coarse aggregate stone shall be piled against the wire so as to anchor it against the gutter and inlet cover, and to completely cover the inlet opening. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the inlet, cleaned and replaced.
- C. The Contractor shall be responsible for maintaining the gravel curb inlet sediment filters in good condition. The Contractor shall also be responsible for removing the curb inlet protection filters after, in the opinion of the Engineer, stabilization of upstream contributory areas is achieved.

### 3.8 STONE BERMS

- A. Where it is necessary to dewater the pipe trench during the installation of the sewer line or during the construction of the pumping station, the contractor will be responsible for constructing temporary stone berms to filter the effluent groundwater. The effluent discharge is to be directed towards the most well defined drainage area (swale where possible) away from any wetland areas where possible. The stone berms are to be temporarily constructed not more than ten (10) feet downstream from the effluent discharge point.
- B. The stone berms are to be constructed of six (6) inch nominal diameter stones (150 lbs./cu. ft.) and shall have a minimum height of two (2) feet and a top width of not less than four (4) feet. The slopes of the stone berms are not to exceed three (3) horizontal to one (1) vertical (3:1).
- C. The contractor shall be responsible for maintaining the stone berms in good condition. The contractor shall also be responsible for removing the stone berms

upon the completion of dewatering activities.

### 3.9 STOCKPILE PROTECTION

- A. The Contractor shall construct silt fence sediment barriers around all stockpiles of fill, topsoil and excavated overburden that are to remain exposed for periods greater than one (1) week.
- B. The silt fence shall be constructed as shown on the Contract Drawings.
- C. Silt fences shall be maintained in good operating condition by the Contractor until said stockpiles are brought to final grade and stabilized with permanent vegetative cover.
- D. Where applicable, stockpiling areas shall be stabilized by permanent vegetative measures. Stabilization of stockpiling areas following stockpile removal shall be through the use of permanent vegetative measures as specified.
- E. Stockpiles of topsoil, fill and excavated overburden shall be located a minimum of 50 feet from wetlands and surface waters.

### 3.10 SEDIMENT BARRIERS

- A. The Contractor shall construct silt fences at all locations indicated on the Contract Drawings. Silt fences shall be constructed down slope of construction activities to intercept and detain sediment from disturbed areas.
- B. Silt fence sediment barriers shall be constructed as shown and shall be maintained in good operating condition by the Contractor until stabilization of upstream contributory areas is achieved.
- C. Silt fences shall be constructed so that water cannot bypass them around the ends.
- D. The Contractor shall remove silt build up as required to maintain the silt fence in good operating condition, and shall remove the silt fence when it is no longer needed.

### 3.11 EROSION CONTROL MATS

- A. The Contractor shall install erosion control mats in accordance with Contract Documents to provide soil stabilization.
- B. Erosion control mats shall be installed as shown by the Contractor in compliance with the installation instructions as detailed in the Contractor Documents.

### 3.12 CONSTRUCTION ENTRANCES

- A. The Contractor shall construct construction entrances at points necessary to prevent the transportation of sediment onto the surrounding roadways.

- B. Construction entrances shall be constructed as shown and shall be maintained in good operating condition by the Contractor until construction is complete.
- C. Construction entrances shall be cleaned or replaced as needed by the Contractor to maintain good operating condition and to prevent the transportation of sediment onto the surrounding roadways.

### 3.13 SCOUR HOLES

- A. The Contractor shall construct scour holes in each proposed stormwater basin in locations designated in the Contract Documents.
- B. Scour holes shall be constructed by the Contractor with slopes, lengths, widths, and depths in accordance with Contract Documents.

### 3.14 MAINTENANCE OF CONTROL MEASURES

- A. Maintenance of all soil erosion and sediment control measures shall be the responsibility of the Contractor during construction. The Contractor shall maintain structural and non-structural measures such that soil erosion is minimized throughout the construction period.
- B. When complete site stabilization is achieved, the Contractor shall be responsible for removal of remaining temporary control structures.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 MEASUREMENT

- A. No separate payment will be made for soil erosion and sediment control measures, restoration, or stabilization, including all work required for or incidental to the installation and maintenance thereof, but the price of which shall be included under the lump sum cost of the proposal.

END OF SECTION

## EXCAVATION SUPPORT AND PROTECTION

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Provide excavation support and protection.

#### 1.2 SUBMITTALS

- A. Shop Drawings: Layout of shoring and bracing and other data, acceptable to local authorities having jurisdiction, prepared by a qualified professional engineer.

#### 1.3 QUALITY ASSURANCE

- A. Survey of Adjacent Structures and Levels: Registered land surveyor prior to excavation.
- B. Engineer: A professional engineer licensed in the jurisdiction of the project.
- C. System Design: Prevent cave-ins, loss of ground, or damage to people and property. Maintain shoring and bracing during construction activities, and remove shoring and bracing if practical when construction and filling is complete.
- D. Comply with codes and ordinances of governing authorities having jurisdiction. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Excavation Support and Protection:
  - 1. Type: Heavy gauge steel sheeting.
  - 2. Type: Steel H-beams.
  - 3. Type: Treated heavy timbers.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install in proper relation with adjacent construction to permit forming and finishing of concrete surfaces. Coordinate with work of other sections. Monitor during work progress
- B. Locate shoring and bracing to avoid permanent construction. Anchor and brace to prevent collapse.

END OF SECTION

## AGGREGATE BASE COURSES

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Excavate as indicated and install aggregate base course as detailed on the Contract Drawings and as specified herein.
- B. Provide all labor, superintendence, materials, tools, transportation, equipment and all means of construction necessary and reasonably incidental to the installation of aggregate base course.
- C. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated in the Contract Documents and/or in the specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

#### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports.

#### 1.3 QUALITY ASSURANCE

- A. The quality of materials and performance of work specified in this section shall be in accordance with the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications). Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Construction Tolerances to be in accordance with NJDOT Specifications
- C. References:
  - 1. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications).
    - a. Section 301: Subbase
    - b. Section 302: Aggregate Base Course

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Dense Graded Aggregate Base Course:
  - 1. Materials: Section 302.02

2. Dense Graded Aggregate. Subsection 901.10

B. Soil Aggregate I-13

1. Soil Aggregate I-13: Subsection 901.11

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. All construction methods shall conform to Section 301 and 302 of the NJDOT Specifications.
- B. All subbase and base compacting shall include the following: the in-place dry density of each compacted layer will be determined according to AASHTO T 191 or T 310 (Direct Transmission Method) except that only one method will be used throughout the Project
- C. Remove loose material from compacted subbase. Proof roll and check for areas requiring additional compaction. Report unsatisfactory conditions in writing. Beginning of work means acceptance of subbase.
- D. Aggregate Mixture: Dense Graded Aggregate Base Course. Comply with NJDOT Specifications. Class as required by loading and use.
- E. Aggregate Mixture: Soil Aggregate I-13. Comply with NJDOT Specifications. Class as required by loading and use.
- F. Apply prime coat to prepared subbase. Apply tack coat to previous laid work and adjacent in-place concrete surfaces.
- G. Dense Graded Aggregate Base Course shall be furnished, placed, and compacted prior to the placement of Hot Mix-Asphalt 19M64 Base Course.
- H. Soil Aggregate I-13 shall be furnished, placed, and compacted prior to the placement of Dense Graded Aggregate Base Course.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 MEASUREMENT

- A. Separate payment will not be made for aggregates or the work required for or incidental to the installation thereof, including excavation, compaction, test strips, and quality control for compaction, including comparison cores, and nuclear density testing, but the costs of which shall be included in the lump sum cost of the proposal.

END OF SECTION

# ASPHALT PAVING

## PART 1 GENERAL

### 1.1 SUMMARY

- A. Complete asphalt paving as detailed on the Contract Drawings and as specified herein.
- B. Provide all labor, superintendence, materials, tools, transportation, equipment and all means of construction necessary and reasonably incidental to the installation of asphalt paving.
- C. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated in the Contract Documents and/or in the specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports.

### 1.3 QUALITY ASSURANCE

- A. The quality of materials and performance of work specified in this section shall be in accordance with the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications). Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Construction Tolerances to be in accordance with NJDOT Specifications the exception of the following:
- C. References:
  - 1. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications).
    - a. Section 401: Hot Mix Asphalt (HMA) Courses

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Hot-Mix Asphalt Surface Course and Base Course:
  - 1. Materials: NJDOT Specifications Section 401



- 2. Mixture: HMA 9.5M64, Subsection 902.02, mix shall contain maximum allowable amount of Reclaimed Asphalt Pavement (RAP).
- 3. Mixture: HMA 19M64, Subsection 902.02, mix shall contain maximum allowable amount of Reclaimed Asphalt Pavement (RAP).
- B. Prime Coat: Subsection 902.01.02.
- C. Tack Coat: Emulsified asphalt, Subsection 902.01.03.
- D. Herbicide Treatment: EPA registered chemical for weed control.
- E. Marking Paint: Alkyd-resin type, lead and chromate free, white or yellow.

**PART 3 EXECUTION**

**3.1 INSTALLATION**

- A. Method of construction to include Hot Mix Asphalt plant and equipment, Hot Mix Asphalt pavers, vehicles for transporting Hot Mix Asphalt, rollers, and all construction methods shall conform to Section 401 of the NJDOT Specifications with the exception of the following subsection replacement in Section 401.03.03 HMA Courses:

**H. Air Voids Acceptance Plan.**

The in-place air voids of each mixture in a completed lot shall be a minimum of 2 percent and a maximum of 8 percent. Conformance will be determined on the basis of the average of five air voids measurements for each lot of approximately 10,000 square yards of pavement surface area. Air voids will be determined from 6-inch diameter drilled cores tested according to AASHTO T 166 and T 209. The pay quantity for each nonconforming lot will be reduced according to the following table:

**REDUCTION PER LOT DUE TO  
NONCONFORMANCE TO AIR VOIDS REQUIREMENTS**

LOT AVERAGE AIR VOIDS (FIVE SAMPLES)	REDUCTION PER LOT (PERCENT OF EACH LOT)
0.0 TO 1.4	20
1.5 TO 1.9	10
2.0 TO 8.0	0
8.1 TO 9.0	5
9.1 TO 10.0	10
OVER 10.0	20

**I. Thickness Requirements.**

THIS SUBSECTION IS DELETED. IN NO INSTANCE WILL A COMPACTED AVERAGE THICKNESS OF LESS THAN 1.25 INCHES BE ACCEPTABLE.

THIS SUBSECTION IS REPLACED BY THE FOLLOWING:

Upon completion of the Hot Mix Asphalt paving, the engineer will obtain cores from the finished pavement at random locations.

The thickness requirements contained herein shall apply only when each component Hot Mix Asphalt mixture in the pavement structure is specified to be a uniform thickness, when such uniform thicknesses of Hot Mix Asphalt mixtures are specified. The combined total thickness of the mixture or mixtures shall be measured to determine compliance with the governing acceptance limit shown in Table 401.03.03-8. In addition, the surface course shall be measured to determine compliance with a minimum thickness requirement using an acceptance limit of 1.25 inches. Results of this check on surface course minimum thickness will be used solely to determine whether a remove and replace or an overlay condition exists, not for payment reduction.

**TABLE 401.03.03-8 THICKNESS ACCEPTANCE LIMITS**

<b>SPECIFIED OR TOTAL PLAN THICKNESS (INCHES)</b>	<b>ACCEPTANCE LIMIT (INCHES)</b>
1.5	1.25
2.0	1.70
2.25	1.90
3.0	2.60
4.0	3.50
4.5	3.95
5.0	4.40
5.5	4.85
6.0	5.30
OVER 6.0	SPECIFIED THICKNESS LESS 0.7

Conformance to thickness requirements will be determined in lots consisting of approximately 10,000 square yards or less. Areas consisting of different combinations of Hot Mix Asphalt mixtures or thickness will not be included in the same lot.

A thickness lot shall have not more than 25 percent of the lot area, as determined from Table 401.03.03-9, less than the governing acceptance limit for total thickness shown in Table 401.03.03-8.

The acceptance of a thickness lot will be determined from thickness measurements of five drilled cores obtained by the engineer for each lot. Each core will be removed from a random location within each lot and shall be a minimum of 4 inches in diameter. The total core thickness and the thickness of each component Hot Mix Asphalt mixture contained therein will be determined in accordance with NJDOT B-4.

When variations in total thickness cause more than 25 percent of the areas of a lot to be less than the governing acceptance limit shown in table 401.03.03-8, the lot is unacceptable and shall be removed and replaced or overlaid. However, should the percent of lot deviating from the thickness acceptance limit not exceed 45 percent, upon written request, the lot may be left in place without being overlaid provided that the lot payment will be reduced in accordance with table 401.03.03-9.

The percent of lot area less than the applicable acceptance limit shall be determined from the calculated value for the term QL.

The term QL is here defined as:

**AVERAGE LOT THICKNESS - THICKNESS ACCEPTANCE LIMIT**

$$QL = \frac{\text{-----}}{\text{RANGE}}$$

Where average lot thickness is the average of the total thickness measurements obtained from the five lot cores and range is the absolute difference between the smallest and largest total thickness measurements obtained from the five lot cores.

**TABLE 401.03.03-9 REDUCTION PER LOT DUE TO NONCONFORMANCE TO THICKNESS REQUIREMENTS**

QL EQUAL TO OR GREATER THAN	LESS THAN	PERCENT OF LOT AREA OUTSIDE THICKNESS ACCEPTANCE LIMIT	REDUCTION PER LOT, PERCENT (SEE NOTE 1)
0.30	--	0-25	NONE
0.23	0.30	26-30	5
0.17	0.23	31-35	10
0.11	0.17	36-40	20
0.06	0.11	41-45	50
--	0.06	GREATER THAN 45	(SEE NOTE 2)

Note 1 - percent reductions are not applicable when the term QL is calculated to determine if the surface course complies with the minimum thicknesses.

Note 2 - remove and replace or overlay.

The term QL shall also be calculated for the HMA surface course of each lot independently using the core thickness values for that course and a minimum thickness acceptance limit of 1.25 inches. When the QL value, so calculated, is less than 0.23 indicating that more than 30 percent of the surface course is outside the minimum thickness acceptance limit of 1.25 inches, the surface course in that lot shall be removed and replaced or overlaid, and any reduction for that lot based on total thickness requirements shall not be applied.

When an unacceptable lot is overlaid, the overlay shall be of the surface course mixture specified for that lot and shall be a minimum of 3 times the nominal maximum size of the HMA surface course.

The overlaid or replaced lot is only that material placed up to the specified total thickness of the combined mixtures. For an overlaid or replaced lot, the quantity of material shall be determined using the computed average weight of the mixture, the area of the lot and the difference between the specified total thickness and the average thickness of the five lot cores.

**J. Ride Quality Requirements.**

THIS SUBSECTION IS REPLACED BY THE FOLLOWING:

The paving operation is acceptable if the surface course is in substantial conformity with 1/8 inch in 10 feet surface tolerance. Should the surface be found not in conformity, the resident engineer may direct that paving operations be discontinued until mutually acceptable paving methods or equipment is utilized. Additional compensation, extension of contract time, or other concession will not

be permitted because of revised methods or equipment necessary to produce a HMA surface in substantial conformity with a 1/8 inch in 10 feet surface tolerance.

- B. Asphalt Mixture: Comply with NJDOT Specifications. Class as required by loading and use.
- C. Remove loose material from compacted subbase. Proof roll and check for areas requiring additional compaction. Report unsatisfactory conditions in writing. Beginning of work means acceptance of subbase.
- D. Apply prime coat to prepared subbase. Apply tack coat to previous laid work and adjacent in-place concrete surfaces.
- E. Begin rolling when pavement can withstand weight of roller. Roll while still hot to obtain maximum density and to eliminate roller marks.
- F. Any asphalt work deemed defective for thickness and smoothness shall be removed and replaced and patched to eliminate evidence of patching at no cost to the Owner.

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

- A. Separate payment will not be made for hot mix asphalt pavement, including all work required for and incidental to the installation thereof, including excavation, compaction, test strips, and quality control for compaction, including comparison cores, and nuclear density testing. All costs thereof shall be included in the lump sum cost of the proposal.

END OF SECTION

## CONCRETE SIDEWALK AND DRIVEWAYS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Complete concrete sidewalk as detailed on the Contract Drawings and as specified herein.
- B. Provide all labor, superintendence, materials, tools, transportation, equipment and all means of construction necessary and reasonably incidental to the installation of concrete sidewalks and driveways.
- C. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated in the Contract Documents and/or in the specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

#### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports.

#### 1.3 QUALITY ASSURANCE

- A. The quality of materials and performance of work specified in this section shall be in accordance with the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications) and the American Association of State Highway and Transportation Officials and all amendments thereto (AASHTO Specifications). Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Construction Tolerances to be in accordance with NJDOT and AASHTO Specifications
- C. References:
  - 1. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019 and all amendments thereto (NJDOT Specifications).
    - a. Section 606: Sidewalks, Driveways, and Islands
  - 2. American Association of State Highway and Transportation Officials and all amendments thereto (AASHTO Specifications).
    - a. AASHTO Spec M 33

b. AASHTO Spec M 213

D. Causes for Rejection of Concrete Sidewalks, Driveways, and Islands

1. Concrete sidewalks, driveways, and islands shall be rejected and ordered replaced by the Engineer at no cost to the Owner if any, or all, of the following should occur or exist:
  - a. Staining or discoloration of concrete sidewalk, driveway, or island.
  - b. Concrete sidewalk, driveway, or island is out of alignment.
  - c. Concrete sidewalk, driveway, or island is out of grade.
  - d. Joints and surfaces are improperly finished.
  - e. Expansion joints protrude from concrete sidewalk, driveway, or island.
  - f. Cracks, chips or other damage occur during the construction or maintenance period.
  - g. Settlement of concrete sidewalk, driveway, or island.
  - h. Inspection of form work not asked for by Contractor prior to pouring of concrete sidewalk, driveway, or island.
  - i. Improper vibration of concrete.
  - j. Vandalism during initial set-up of concrete.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete Sidewalks and driveways:
  1. Materials: NJDOT Section 606
  2. Mixture: Class B Concrete, NJDOT Subsection 903.03.
  3. Dense Graded Aggregate. NJDOT Subsection 901.10

PART 3 EXECUTION

3.1 INSTALLATION

- A. The Contractor shall have adequate equipment to perform the work necessary under this Contract.
- B. Method of construction shall conform to Section 606 of the NJDOT Specifications.

- C. All concrete sidewalks and driveways shall be cured in accordance with subsections 606.03.02 and 405.03.02 of the NJDOT Specifications.

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

- A. Separate payment will not be made for Concrete Sidewalk, including all work required for and incidental to the installation thereof, including contraction joint assemblies, expansion joint assemblies, excavation, compaction, and dense graded aggregate. All costs thereof shall be included in the lump sum cost of the proposal.

END OF SECTION

## **SITE IMPROVEMENTS**

### **PART 1 GENERAL**

#### **1.1 SUMMARY**

- A. Site improvements and amenities must cover the entire area of the contemplated construction and installation as illustrated on the drawings and in the manner and detail described in the specifications.
- B. Contractor shall provide all labor, superintendence, materials, tools, transportation, plant and equipment and all means of construction necessary and reasonably incidental to the complete the site clearing, grubbing, and stripping specified herein and as indicated on the Contract Drawings.
- C. All materials and labor obviously a part of the work, and as necessary for proper installation and/or operation of same, although not specifically indicated on the Contract Drawings and/or in the Specifications shall be provided by the Contractor as if called in detail without additional cost to the Owner.

#### **1.2 SUBMITTALS**

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

#### **1.3 QUALITY ASSURANCE**

- A. Comply with governing codes and regulations. Deliver, handle, and store materials in accordance with manufacturer's instructions. Use experienced installers.

### **PART 2 PRODUCTS**

#### **2.1 MATERIALS**

- A. Products shall be as specified herein and as indicated on the Contract Drawings.
- B. If a product is not specifically called out, provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years.

### **PART 3 EXECUTION**

#### **3.1 INSTALLATION**

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper function. Clean and protect work from damage.

**END OF SECTION**



## UTILITIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Site Improvements include installation of Public Utilities, including Electric, to the new building. Contractor shall coordinate installation with the respective utility companies.

### PART 2 - PRODUCTS – N/A

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Installation to be completed by the respective utility companies. Contractor to coordinate installation.

### PART 4 - MEASUREMENT AND PAYMENT

#### 4.1 MEASUREMENT

- A. Actual installation costs to be paid by the Contractor and will be a reimbursable expense upon submittal of proper documentation and will be applied against the Public Utility Allowance.
- B. Cost of coordinating with the utility companies will not be measured for payment but shall be included in the various items of the Proposal.

#### 4.2 PAYMENT

- A. Payment will be made under:

Pay Item	Pay Unit
Public Utility Allowance	Lump Sum

END OF SECTION