

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE RE-BID OF

CONTRACT A
SITE CONSTRUCTION FOR NEW MUNICIPAL COMPLEX
ASHLAND AVENUE

And

CONTRACT B
BUILDING CONSTRUCTION FOR NEW MUNICIPAL COMPLEX
ASHLAND AVENUE

FOR

FOLCROFT BOROUGH
1555 ELMWOOD AVENUE
FOLCROFT, PA 19032

*REDEVELOPMENT ASSISTANCE CAPITAL PROGRAM (RACP)
FUNDED PROJECT*

BID OPENING
MARCH 14, 2022
10:00 AM

CATANIA ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS
520 W. MAC DADE BOULEVARD
MILMONT PARK, PA 19033-3311

FEBRUARY 2022

FILE No.: 82725-109-MX

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**REDEVELOPMENT ASSISTANCE CAPITAL PROGRAM (RACP) GUIDELINES AND REQUIREMENTS
FOLCROFT BOROUGH ORDINANCE 2022-01 RESPONSIBLE CONTRACTOR REQUIREMENTS**

NOTICE TO BIDDERS
FOLCROFT BOROUGH

Online sealed bids will be received by Folcroft Borough online via the PennBid Program at www.PennBid.net until 10:00 AM, on Monday, March 14, 2022 at which time and place they will be publicly open and read aloud for the Re-Bid of the New Municipal Complex Along Ashland Avenue.

- **Contract A – Site Construction**
- **Contract B – Building Construction**

All Bid Documents, Construction Plans and Specifications are available online via the PennBid Program at www.PennBid.net at no cost to prospective bidders.

The successful bidder, who is awarded the contract, will be required to pay PennBid Program a fee of 1/3 % of the contract award value. There is a minimum award fee of \$100.00 and a maximum of \$5,000.00. Bidders must confirm the fees associated with bidding through PennBid and the successful bidder is responsible for the fees associated with the awarded bid.

A Mandatory Pre-Bid meeting will be held February 24, 2022 at 11 AM at the proposed site along Ashland Avenue, Folcroft, PA 19032.

A bid bond in the amount of ten percent (10%) of the total bid, made payable to Folcroft Borough, must accompany each bid.

Attention of Bidders is called to all of the requirements contained in the bid package, particularly to the PA Prevailing Wage Rates, Public Works Employment Verification Form, various insurance requirements, various equal opportunity provisions, and the requirements for a payment bond and performance bond for 100% of the contract price and a one-year maintenance bond for 10% of the contract price. All Contractors and Subcontractors of any tier that perform work under this contract must comply with Folcroft Borough Ordinance No. 2022-01 "Responsible Contractor Requirements". Each bidder must submit a completed Contractor Responsibility Certification Form, and if applicable, a Subcontractor list and Subcontractor Responsibility Certification with the bid. Failure to submit the documents may result in bid being rejected.

Folcroft Borough reserves the right to accept or reject any or all bids thereof, and waive any informalities in the bidding, as they deem in the interest of the Borough.

BY ORDER OF THE COUNCIL
OF THE BOROUGH OF FOLCROFT

Joseph Papaleo, Council President

INSTRUCTIONS TO BIDDERS

1. **THE WORK:** **Contract A Site Construction** – The proposed project consists of all site construction associated with the New Municipal Complex along Ashland Avenue, including site demolition, grading, utility installation, stormwater improvements, parking lot installation, concrete walkways, and associated improvements and restoration. The site contractor will be responsible for all utility installation up to five (5') feet of the building footprint.

Contract B Building Construction – The proposed project consists of all building construction associated with the New Municipal Complex along Ashland Avenue, including building slab, building formation, drywall installation, roofing, plumbing, and associated improvements and restoration. The building contractor is responsible for all utility installation and connections from the building footprint extending out a distance of five (5') feet. In addition, the building contractor will be responsible for coordinating with all utility companies for the installation and connections and coordination with the awarded site contractor.

2. SECURING DOCUMENTS

Copies of the proposed Contract Documents may be obtained from www.PennBid.net upon the conditions set forth in the Invitation to Bid.

3. BID FORM

In order to receive consideration, make Bids in strict accordance with the following:

- A. Make Bids upon the forms provided therefore, properly signed and with all items filled out. Do not change the wording of the Bid form, and do not add words to the Bid form. Unauthorized conditions, limitations, or provisions attached to the Bid will be cause for rejection of the Bid. If alterations by erasure or interlineation are made for any reason, explain over such erasure or interlineation with a signed statement from the Bidder.
- B. No telegraphic Bid or telegraphic modification of a Bid will be considered. No Bids received after the time fixed for receiving them will be considered. Late Bids will be returned to the Bidder unopened.
- C. Address Bids to the Owner, and deliver to the address given in the Invitation to Bid on or before the day and hour set for opening the Bids. Enclose each Bid in a sealed envelope bearing the title of the work, the name of the Bidder, and the date and hour of the Bid opening. Submit only the original signed copy of the Bid. It is the sole responsibility of the Bidder to see that his Bid is received on time.

4. BONDS

- A. Bid security in the amount stated in the Invitation to Bid must accompany each Bid. The successful Bidder's security will be retained until he has signed the Contract and has furnished required Certificates of Insurance.
- B. The Owner reserves the right to retain the security of all Bidders until the successful Bidder enters into the Contract or until 45 days after Bid opening, whichever is sooner. Other Bid security will be returned as soon as practicable. If any Bidder refuses to enter into a Contract, the Owner may retain his Bid security as Liquidated Damages but not as a penalty.
- C. Prior to signing the Contract, the Owner will require the successful Bidder to secure and post a Labor and Materials Payment Bond and Performance Bond, each in the amount of 100% of the Contract Sum, and each on the form provided therefore in the Project Manual. Such bonds shall be issued by Surety acceptable to the Owner. Costs of such bonds will be paid for by the Contractor. In lieu of the above bonds, Federal or Commonwealth chartered lending institution irrevocable letters of credit and restrictive or escrow accounts, equal to 100% of the contract amount, will be acceptable.
- D. Upon completion, a one-year maintenance bond in the amount of 10% of contract shall be furnished. In lieu of said bond, the Owner will withhold retainage due on contract.

5. EXAMINATION OF DOCUMENTS AND SITE OF WORK

Before submitting a Bid, each Bidder shall examine the Drawings carefully, shall read the Specifications and all other proposed Contract Documents, and shall visit the site of the Work. Each Bidder shall fully inform himself prior to Bidding as to existing conditions and limitations under which the Work is to be performed, and shall include in his Bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to a Bidder because of lack of such examination or knowledge. The submission of a Bid will be considered as conclusive evidence that the Bidder has made such examination.

6. PROOF OF COMPETENCY OF BIDDER

A Bidder will be required to furnish evidence satisfactory to the Owner that he and his proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of Contract in a satisfactory manner.

7. WITHDRAWAL OF BIDS

- A. A Bidder may withdraw his Bid, either personally or by written request, at any time prior to the scheduled time for opening of Bids.
- B. No Bidder may withdraw his Bid for a period of 90 calendar days after the date set for opening thereof, and Bids shall be subject to acceptance by the Owner during this period.

8. AWARD OR REJECTION OF BIDS

The Contract, if awarded, will be awarded to the responsible Bidder who has proposed the lowest Contract Sum, subject to the Owner's right to reject any or all Bids and to waive informality and irregularity in the Bids and in the Bidding.

9. EXECUTION OF AGREEMENT

- A. The Form of Agreement which the successful Bidder will be required to execute is included in the Project Manual.
- B. The Bidder to whom the Contract is awarded shall, within 15 calendar days after notice of award and receipt of Agreement forms from the Owner, sign and deliver copies to the Owner.
- C. At or prior to delivery of the signed Agreement, the Bidder to whom the Contract is awarded shall deliver to the Owner those Certificates of Insurance required by the Contract Documents and such Labor and Materials Payment Bonds and Performance Bond as are required by the Owner.
- D. Bonds and Certificates of Insurance shall be approved by the Owner before the successful Bidder may proceed with the Work. Failure or refusal to provide Bonds or Certificates of Insurance in a form satisfactory to the Owner shall subject the successful Bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

10. INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

- A. If any person contemplating submitting a Bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he may submit to the Engineer a written request for interpretation thereof not later than 7 days before Bids will be opened. The person submitting the request shall be responsible for its prompt delivery.
- B. Interpretation or correction of proposed Contract Documents will be made only by Addendum and will be mailed or delivered to each General Contract Bidder of record. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

11. PRE-BID CONFERENCE

A mandatory Pre-Bid Conference will be held for the purpose of considering questions posed by Bidders. The conference will be open to all prospective Bidders and will be held at the following: **Thursday, February 24, 2022 at 11:00AM at the proposed site along Ashland Avenue, Folcroft, PA 19032.**

12. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

- A. The Agreement will include a stipulation that the Work be completed in a period of:

Contract A Site Construction - 270 calendar days following receipt of the Owner's Notice to Proceed.

Contract B Building Construction - 270 calendar days following receipt of the Owner's Notice to Proceed.

- B. The Agreement will include a stipulation that Liquidated Damages will be established in the amount of **\$500.00** per calendar day for each calendar day after the agreed completion date that the Work is not fully certified by the Engineer as being Substantially Complete as that stage of completion is defined in the conditions of the Contract.

13. NON-COLLUSION AFFIDAVIT

The Non-Collusion Affidavit must be submitted with the Bid proposal or the Bid will be held to be invalid.

14. MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets must be submitted for respective products, in compliance with Federal Hazard Communication Standard Act (29 CFR 1910, 1200) and various State Right-to-Know Laws.

15. NOTICE OF SPECIAL CONDITIONS

Attention of the bidder is particularly called to those parts of the General Conditions and other contract documents and specifications which deal with the following:

- A. Insurance Requirements;
- B. Pennsylvania Prevailing Wage Rates
- C. Requirement for a Payment Bond and Performance Bond for 100% of the Contract price;
- D. Requirement that all Subcontractors be approved by the Owner;
- E. Public Works Employment Verification
- F. Time-for-Completion and Liquidated Damages requirements;
- G. Safety Standards
- H. Contractor's responsibility to obtain permits
- I. Affirmative Action and Equal Opportunity provisions; and

END OF INSTRUCTION TO BIDDERS

FORM OF PROPOSAL – CONTRACT A
SITE CONSTRUCTION

TO: Folcroft Borough
1555 Elmwood Avenue
Folcroft, PA 19032

FROM: _____
ADDRESS: _____

PHONE: _____
FAX: _____

The undersigned, having familiarized himself with the existing conditions in the Project Area affecting the cost of the Work, including any reports available by the Owner, and with the contract Documents which includes the Notice to Bidders, Instructions to Bidders, Non-Collusion Affidavit, Form of Proposal, Bid Bond, Articles of Agreement, Performance Bond, Labor and Materials Bond, General Conditions, Specials Conditions and Technical Specifications and Drawings, as prepared by Catania Engineering Associates, Inc., Consulting Engineers, 520 W. MacDade Boulevard, Milmont Park, PA 19033 (610-532-2884), hereby proposes to furnish and install all supervision, technical personnel, labor, materials, machinery, tools, appurtenances and equipment required for the Site Construction of the New Municipal Complex along Ashland Avenue in Folcroft Borough in accordance with the above listed documents for the total sum of:

AMOUNT IN WRITING

AMOUNT IN FIGURES

In submitting this Bid, the Bidder understands that the right is reserved by the Owner to reject any and all Bids. If written notice of the acceptance of this Bid is mailed, telegraphed or delivered to the undersigned within 30 days after the opening thereof, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to execute and deliver an Agreement in the prescribed form and furnish the required bond within 10 days after the Agreement is presented to him for signature.

Security in the sum of _____ Dollars (\$) in the form of _____ is submitted herewith in accordance with the INSTRUCTIONS TO BIDDERS.

Attached hereto is an affidavit in proof that the undersigned has not colluded with any person in respect to this bid or any other bid or the submitting of bids for the Contract for which this Bid is submitted.

The Bidder is prepared to submit a Financial and Experience Statement and Bidder's Qualifications Statement upon request.

FORM OF PROPOSAL – CONTRACT B
BUILDING CONSTRUCTION

TO: Folcroft Borough
1555 Elmwood Avenue
Folcroft, PA 19032

FROM: _____
ADDRESS: _____

PHONE: _____
FAX: _____

The undersigned, having familiarized himself with the existing conditions in the Project Area affecting the cost of the Work, including any reports available by the Owner, and with the contract Documents which includes the Notice to Bidders, Instructions to Bidders, Non-Collusion Affidavit, Form of Proposal, Bid Bond, Articles of Agreement, Performance Bond, Labor and Materials Bond, General Conditions, Specials Conditions and Technical Specifications and Drawings, as prepared by Catania Engineering Associates, Inc., Consulting Engineers, 520 W. MacDade Boulevard, Milmont Park, PA 19033 (610-532-2884), hereby proposes to furnish and install all supervision, technical personnel, labor, materials, machinery, tools, appurtenances and equipment required for the Building Construction of the New Municipal Complex along Ashland Avenue in Folcroft Borough in accordance with the above listed documents for the total sum of:

AMOUNT IN WRITING

AMOUNT IN FIGURES

In submitting this Bid, the Bidder understands that the right is reserved by the Owner to reject any and all Bids. If written notice of the acceptance of this Bid is mailed, telegraphed or delivered to the undersigned within 30 days after the opening thereof, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to execute and deliver an Agreement in the prescribed form and furnish the required bond within 10 days after the Agreement is presented to him for signature.

Security in the sum of _____ Dollars (\$) in the form of _____ is submitted herewith in accordance with the INSTRUCTIONS TO BIDDERS.

Attached hereto is an affidavit in proof that the undersigned has not colluded with any person in respect to this bid or any other bid or the submitting of bids for the Contract for which this Bid is submitted.

The Bidder is prepared to submit a Financial and Experience Statement and Bidder's Qualifications Statement upon request.

CERTIFICATION OF NONSEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity Clause in any contract resulting from acceptance of this Bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage areas, transportation and facilities provided for employees which are segregated on the basis of race, color, religion, or natural origin because of habit, local custom or otherwise the Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time period) he will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity Clause, and that he will retain such certifications in his files.

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. Paragraph 1001.

Date: _____, 20____.

BIDDER _____

BY _____

TITLE _____

Official Address & Phone Number: _____

PHONE: _____

WE HEREBY ACKNOWLEDGE RECEIPT OF ADDENDUM #____ DATED _____.

WE HEREBY ACKNOWLEDGE RECEIPT OF ADDENDUM #____ DATED _____.

WE HEREBY ACKNOWLEDGE RECEIPT OF ADDENDUM #____ DATED _____.

WORKER'S CLASSIFICATION

A list of the classes of all workers to be used on this project must be included with your Form of Proposal. This must include classes for any and all sub-contractors to be utilized.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SUBCONTRACTOR DECLARATION FORM

Each prime contractor is required to submit a list of subcontractors it intends to use on the project.

Subcontractor	Business Address	Type of Work

Project Name

Prime Contractor

Signature

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, _____ as
PRINCIPAL, and _____ as SURETY, are held
and firmly bound unto the _____ (hereinafter
called the OWNER), in the penal sum of _____ (\$ _____) lawful
money of the United States, for payment of which sum well and truly to be made, we bond ourselves, our heirs,
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THE OBLIGATION IS SUCH that whereas the Principal has submitted the accompanying
Bid dated _____ for _____.

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the time specified therein after the
opening of the same, and shall within 10 days after the Principal is notified by the Owner of the award of such
Contract to him, enter into a written contract with the Owner, in accordance with the Bid as accepted; and give
bond with good and sufficient surety or sureties as may be required for the faithful performance and proper
fulfillment and labor supplied, if required in said Contract; or in event of the withdrawal of said Bid within the
period specified, or the failure to enter into such Contract and give such bonds within the time specified if the
Principal shall pay the Owner the difference between the amount specified in said Bid and the amount for which
the Owner may procure the required materials or supplies, or both, if the latter amount of the former, together
with any other expenses and costs that may have been incurred by the Owner, then the above obligation shall
be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals
this _____ day of _____, 20____, the name and corporate seal of each
corporate party being hereto affixed and these presents duly signed by its undersigned representative,
pursuant to authority of its governing body.

WITNESSED BY:

(Individual Principal)

(Name of Partner)

(Business Address)

ATTEST:

(Corporate Principal)

(Corporate Surety)

By: _____

(Business Address)

SEAL

(Power of Attorney for person signing for Surety Company must be attached to Bond.)

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the corporation as Principal in the
within bond; and that _____ who signed the said bond on behalf of the
Principal was then the _____ of said corporation; that I know his signature, and his
signature thereto is genuine; and that said bond was duly signed, sealed and attested to for an in behalf of said
corporation by the authority of its governing body.

(Corporate Seal)

We, the undersigned, will provide _____ as Principal, a
Performance and Payment Bond on the form provided, to the Owner in the penal sum of the Principal's bid for
_____.

(Surety)

(Address)

Date: _____

Signed: _____
(Attorney-in-fact)

NON-COLLUSION AFFIDAVIT

State of _____ :
County of _____ :§

I, the undersigned, state that I am authorized to make this Affidavit on behalf of my firm, and its Owners, Directors and Officers. I am the person responsible in my firm for the price(s) and the amount of this Bid.

I state that:

The price(s) and amount(s) of this Bid have been arrived at independently and without consultation, communication or agreement with any other Contractor, Bidder or potential Bidder.

Neither the price(s) nor the amount(s) of this Bid, and neither the approximate price(s) nor approximate amount(s) of this Bid have been disclosed to any other firm or person who is a Bidder or potential Bidder, and they will not be disclosed before Bid opening.

No attempt has been made or will be made to induce any firm or person to refrain from bidding on this Contract, or to submit any intentionally high or competitive Bid or other form of Complementary Bid.

The Bid of my firm is made in good faith and not pursuant to any Agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive Bid.

This firm, its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last 4 years been convicted or found liable for any act prohibited by state or federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that this firm understands and acknowledges that the above representations are material and important, and will be relied on by the Owner in awarding the Contract(s) for which this Bid is submitted. I understand, and my firm understands, that any misstatement in this Affidavit is and shall be treated as fraudulent concealment from the Owner of the true facts relating to the submission of Bids for this Contract.

FIRM _____

NAME _____

TITLE _____

SWORN TO AND SUBSCRIBED BEFORE ME
THIS _____ DAY _____ 20_____.

NOTARY PUBLIC

MY COMMISSION EXPIRES _____.

INSTRUCTIONS FOR NON-COLLUSION AFFIDAVIT

1. This Non-Collusion Affidavit is material to any contract awarded pursuant to this Bid. According to the Pennsylvania Anti-Rigging Act, 73 P.S. §§ 1611 et seq., governmental agencies may require Non-Collusion Affidavits to be submitted together with Bids.
2. This Non-Collusion Affidavit must be executed by the member, officer or employee of the Bidder who makes the final decision on prices and the amount quoted in the Bid.
3. Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawfully and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the Bidder with responsibilities for the preparation, approval or submission of the Bid.
4. In the case of a Bid submitted by a joint venture, each party to the venture must be identified in the Bid Documents, and an Affidavit must be submitted separately on behalf of each party.
5. The term "Complementary Bid" as used in the Affidavit has the meaning commonly associated with that term in the bidding process, and includes the knowing submission of Bids higher than the Bid of another firm, any intentionally high or noncompetitive Bid, and any other form of Bid submitted for the purpose of giving a false appearance of competition.
6. Failure to file an affidavit in compliance with these instructions may result in disqualification of the Bid.

BIDDER'S QUALIFICATIONS

All questions must be answered and the date given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit additional information if he so desires.

1. Name of Bidder:
2. Permanent main office address:
3. When Organized:
4. If a corporation, where incorporated:
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contracts on hand: Schedule these showing amount of each contract and the appropriate anticipated dates of completion.
7. General character of work performed by your company:
8. Have you ever failed to complete any work awarded to you? If so, where and why.
9. Have you ever defaulted on a contract? If so, where and why.
10. List the more important projects recently completed by your company, stating the approximate cost for each and the month and year completed.
11. List your major equipment available for this contract:
12. List experience in construction work similar in importance to this project:
13. List background and experience of the principal members of your organization, including the officers:
14. List credit available: \$
15. List bank references:
16. Will you, upon request, fill out a detailed financial statement and furnish any other information which may be required by the Owner?
17. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Bidder: _____

By: _____

Title: _____

Dated this _____ day of _____, 20_____.

State of _____,

County of _____:

_____ being duly sworn deposes and says that he is _____ of
and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20_____.

My commission expires: _____ Notary Public

CONTRACT AGREEMENT

ARTICLES OF AGREEMENT made and concluded this ____ day of _____, 20____, between _____, party of the first part, hereinafter called the Contractor, and _____, party of the second part, hereinafter called the Owner.

1. The Contractor, for and in consideration of the payments mentioned to be made in Article 2 by the Owner, agrees to and with the Owner to complete all of the work or such part as may be directed by the Owner in accordance with the plans mentioned and the preceding specifications, under the supervision and to the satisfaction of the Engineer and to the approval of the Owner.
2. The Owner agrees to pay the Contractor for the work embodied in this Contract and described in the specifications, the prices given in the bidding sheet, which is made a part of this Contract.
3. Should the Contractor at any time refuse or neglect to supply a sufficiency of properly skilled workmen, or of materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the agreements herein contained, such refusal, neglect or failure being certified by the Engineer, the Owner shall be at liberty after 3 days written notice to the Contractor to provide any such labor or materials and to deduct the cost thereof from any monies then due or thereafter to become due to the Contractor under this Contract, and if the Engineer shall certify that such refusal, neglect or failure is sufficient ground for such action, the Owner shall also be at liberty to terminate the employment of the Contractor for the said work and either call upon the Surety to complete said Contract or to enter upon the premises and take possession for the purpose of completing the work included under this Contract, of all materials, tools and appliances thereon and to employ any other person or persons to finish the work and to provide the materials therefore, and in case of such discontinuance of the employment of the Contractor shall not be entitled to receive any further payments under this Contract until said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this Contract shall exceed the expenses incurred by the Owner in finishing the work, such excess shall be paid to the Contractor by the Owner, but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expenses incurred through such default shall be audited by the Engineer, whose certificate thereof shall be conclusive and binding upon the parties.
4. The Contractor agrees not to sublet any portion of the Contract, contracts for furnishing and delivery of materials and machinery to be excepted, without the consent of the Owner, and the Contractor further agrees to hold himself responsible for the performance of any work he may sublet.
5. It is further agreed between the parties hereto that no certificate given or payment made under this Contract, except the final payment, shall be conclusive evidence of the performance of this Contract either wholly or in part, and that no payment shall be construed to be an acceptance of defective work or improper material.
6. It is further agreed between the parties hereto that when all the work embraced in this Contract shall have been completed agreeably to the specifications and in accordance with the directions and to the satisfaction of the Engineer and to the approval of the Owner, there shall be made by the Engineer a final estimate of the quantity, character and value of said work in accordance with this Agreement, when the balance appearing to be due to the Contractor shall be paid upon the Contractor, first giving a release under seal of the Owner from all claims and demands whatsoever growing in any manner out of this Agreement, and secondly the Contractor shall produce satisfactory evidence of the payment of all claims due for labor or materials furnished in the performance of the Contract.
7. The Contractor further agrees that before any work is done under this Contract that he will furnish to the Owner two bonds in form with corporate surety satisfactory to the Owner. One of the bonds in the full sum of the Contract \$_____, conditioned for the full and faithful performance of the Agreement and compliance with all terms and conditions herein contained as well as for the maintenance of said work for a period of one year, including the indemnification of the Owner by the Contractor as herein provided; and the other in the full sum of the Contract \$_____, conditioned for the prompt payment of all claims for labor and materials entering the work provided for in this Agreement, such bonds to be delivered to the Owner within 10 days after the date of Agreement, and before any work under this Agreement shall be done.

8. Contract

The executed contract documents shall consist of the following:

- a. This Agreement
- b. Addenda
- c. Invitation for Bids
- d. Instructions to Bidders
- e. Signed copy of Bid
- f. General Conditions
- g. Special Conditions
- h. Technical Specifications
- i. Drawings

This Agreement, together with other documents enumerated herein, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated herein shall govern, except as otherwise specifically stated.

CONTRACTOR:

OWNER: FOLCROFT BOROUGH

Signature

Signature

Typed/printed name

Typed/printed name

Title

Title

Certifications:

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____ who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

(Corporate Seal)

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
Business):

SURETY (Name and Address of Principal Place of

OWNER (Name and Address):

CONTRACT

Date:		
Amount:		
Description: (Name & Location)		

BOND

Date: (Not earlier than Contract Date):		
Amount:		
Modification to this Bond Form:		

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature:		Signature:
Name & Title:		Name & Title:
		(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature:		Signature:
Name & Title:		Name & Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1 The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2 The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the CONTRACT. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3 The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1 The Surety in accordance with the terms of the Contract;

3.3.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4 Waive its right to perform and complete, arrange for completion or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1 After investigation, determine the amount of which it may be liable to the OWNER and, as soon as practicable, after the amount is determined, tender payment therefor to the OWNER; or

4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered of the Surety has

denied pliability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2 Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after the CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was being performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirements shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions

12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2 Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3 CONTRACTOR Default: Failure of the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.4 OWNER Default: Failure of the Owner, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:		
Amount:		
Description: (Name & Location)		

BOND

Date: (Not earlier than Contract Date):		
Amount:		
Modification to this Bond Form:		

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)

Company: (Corp. Seal)

Signature:		Signature:
Name & Title:		Name & Title:
		(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required)

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)

Company: (Corp. Seal)

Signature:		Signature:
Name & Title:		Name & Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS.

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone)

AGENCY OR BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

004316-2

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____ as
Principal, and _____ a corporation,
as Surety, are held firmly bound unto _____ as
Obligee, in the full and just sum of _____ (\$ _____)
for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal entered into a contract with _____
dated _____ for _____

WHEREAS, said contract provides that the Principal will furnish a bond conditioned to guarantee for the
period of one (1) year after approval of the final estimate on said job, by the Owner, against all defects in
workmanship and materials which may become apparent during said period, and

WHEREAS, the said contract has been completed, and was approved on _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if within one (1) year from
the date of approval of the said contract, the work done under the terms of said contract shall disclose
poor workmanship in the execution of said work, and the carrying out of the terms of said contract, or it
shall appear that defective materials were furnished thereunder, then this obligation shall remain in full
force and virtue, otherwise this instrument shall be void.

Signed and sealed this _____ day of _____, 20____.

Witness:

Principal

By: _____
Attorney-in-Fact

STATE OF _____ :
COUNTY OF _____ :

004318-1

PUBLIC WORKS EMPLOYMENT VERIFICATION ACT

The Commonwealth of Pennsylvania enacted Act 127 of 2012, known as the Public Works Employment Verification Act ('the Act') which requires all public work contractors and subcontractors to utilize the Federal Government's E-Verify system to ensure that all employees performing work on public work projects are authorized to work in the United States.

The Department defines a "Public Work" to be construction, reconstruction, demolition, alteration and/or repair work other than maintenance work, done under contract and paid for in whole or in part out of the funds of a public body where the estimated cost of the total project is in excess of twenty-five thousand dollars (\$25,000) but shall not include work performed under a rehabilitation or manpower training program.

The Department of General Services' Public Works Employment Verification Compliance Program is responsible for the administration, education and enforcement of the Public Works Employment Verification Act 127 of 2012. It provides contractors and subcontractors with educational outreach, conducts investigations when complaints are received and random audits to ensure compliance with the requirements of this Act.

Please direct your questions to the Public Works Employment Verification Compliance Office

Mail: Department of General Services Public Works
Employment Verification Compliance Office
Room 105 Tent Bldg.
18th & Herr Streets
Harrisburg, PA 17125



COMMONWEALTH OF PENNSYLVANIA

PUBLIC WORKS EMPLOYMENT VERIFICATION FORM

Date _____

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

☐ Contractor ☐ Subcontractor (check one)

Contracting Public Body _____

Contract/Project No _____

Project Description _____

Project Location _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

PA ONE CALL REQUIREMENTS

PA ONE CALL SYSTEM, INC.

PROTECT YOURSELF

A PHONE CALL
CAN BE YOUR INSURANCE POLICY

A new way to call:



**Know what's below.
Call before you dig.**

WHAT YOU DON'T KNOW CAN HURT YOU.

PENNSYLVANIA ACT 187 REQUIRES NOTIFICATION OF EXCAVATORS,
DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S
SURFACE **ANYWHERE** IN THE COMMONWEALTH.



PENNSYLVANIA ONE CALL SYSTEM, INC.

Dig Safely.

www.paonecall.org

CALL 1-800-242-1776

WORK LOCATION REQUEST FORM

TELEPHONE NUMBER: () EXT.: CALLER: _____

COMPANY NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

WORKSITE INFORMATION:

COUNTY: _____ MUNICIPALITY: _____ WARD: _____

STREET ADDRESS: _____ STREET NAME: _____

NEAREST INTERSECTION: _____

SECOND INTERSECTION: _____

SITE MARKED IN WHITE: ☐ Yes ☐ No

LOCATION INFORMATION: _____

SUBDIVISION: _____ TYPE OF WORK: _____

WORKING IN: ☐ STREET ☐ SIDEWALK ☐ PUBLIC PROPERTY ☐ PRIVATE PROPERTY
☐ OTHER (SPECIFY) _____

DEPTH: _____ EXTENT OF EXCAVATION: _____

METHOD OF EXCAVATION: _____ OWNER/WORK BEING DONE FOR: _____

DURATION OF JOB: _____ PERSON TO CONTACT: _____

PHONE: () EXT: _____ BEST TIME TO CALL: _____

FAX #: () EMAIL ADDRESS: _____

REMARKS: _____

NOTIFICATION TYPE:

☐ CONSTRUCTION (Not less than 3 nor more than 10 Business Days) PROPOSED DIG DATE: _____ TIME: _____

☐ DESIGN (Not less than 10 nor more than 90 Business Days)

TO BE COMPLETED AFTER PLACING ONE CALL

LAWFUL START DATES: _____ THROUGH _____

OTHER SERIAL NUMBERS REFERENCED: _____

FACILITY OWNER MEMBERS NOTIFIED: _____

SERIAL NUMBER ASSIGNED: _____ DATE/TIME: _____

THERE IS AN ANNUAL FEE

10/2007

Facility Owner List	
County	DELAWARE
Municipality	FOLCROFT BORO
Ward	0
<input type="button" value="DEFAULT"/>	

Pennsylvania One Call System Facility Owner List	
For DELAWARE COUNTY / FOLCROFT BORO	
AQUA PENNSYLVANIA INC	
AT&T ATLANTA	
AT&T LOCAL SERVICES	
BUCKEYE PARTNERS	
CENTURYLINK FORMERLY QWEST	
COMCAST CABLE COMMUNICATIONS INC	
DARBY CREEK JOINT AUTHORITY	
DELAWARE CO REGIONAL WTR QLTY CNTRL A	
FOLCROFT BOROUGH OF	
PECO ENERGY	
RCN TELECOM SERVICES OF PHILADELPHIA	
SHELL APPALACHIA	
SOUTHEASTERN PA TRANSPORTATION AUTHORITY	
VERIZON BUSINESS FORMERLY MCI	
VERIZON PENNSYLVANIA LLC	
ZAYO BANDWIDTH FORMERLY PPL TELCOM LLC	

PA PREVAILING WAGE RATES

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project Name:	New Municipal Complex Along Ashland Avenue Contract A - Site Construction, Contract B - Building Construction
Awarding Agency:	Folcroft Borough
Contract Award Date:	3/17/2022
Serial Number:	22-01035
Project Classification:	Building/Highway
Determination Date:	2/7/2022
Assigned Field Office:	Philadelphia
Field Office Phone Number:	(215)560-1858
Toll Free Phone Number:	
Project County:	Delaware County

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	5/29/2017		\$47.30	\$34.85	\$82.15
Asbestos & Insulation Workers	5/1/2018		\$49.30	\$35.85	\$85.15
Asbestos & Insulation Workers	5/1/2019		\$51.20	\$36.95	\$88.15
Asbestos & Insulation Workers	6/1/2020		\$54.20	\$36.95	\$91.15
Asbestos & Insulation Workers	5/1/2021		\$54.35	\$39.95	\$94.30
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2017		\$28.52	\$18.22	\$46.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2018		\$29.52	\$18.22	\$47.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	1/1/2019		\$29.26	\$18.48	\$47.74
Boilermakers	1/1/2018		\$46.26	\$33.36	\$79.62
Boilermakers	3/1/2018		\$45.89	\$33.73	\$79.62
Boilermakers	1/1/2019		\$45.51	\$34.11	\$79.62
Boilermakers	8/1/2019		\$47.21	\$34.11	\$81.32
Boilermakers	1/1/2021		\$49.32	\$34.90	\$84.22
Boilermakers	1/1/2022		\$50.17	\$35.30	\$85.47
Bricklayer	5/1/2017		\$40.98	\$26.78	\$67.76
Bricklayer	5/1/2018		\$43.73	\$26.78	\$70.51
Bricklayer	5/1/2019		\$46.48	\$26.78	\$73.26
Bricklayer	5/1/2020		\$44.45	\$30.31	\$74.76
Bricklayer	5/1/2021		\$45.45	\$30.61	\$76.06
Carpenter - Chief of Party (Surveying & Layout)	5/1/2017		\$45.25	\$27.59	\$72.84
Carpenter - Chief of Party (Surveying & Layout)	5/1/2018	4/30/2019	\$45.83	\$27.59	\$73.42
Carpenter - Chief of Party (Surveying & Layout)	5/1/2019		\$46.54	\$27.59	\$74.13
Carpenter - Chief of Party (Surveying & Layout)	5/1/2020		\$47.73	\$27.59	\$75.32
Carpenter - Chief of Party (Surveying & Layout)	5/1/2021		\$47.47	\$28.71	\$76.18
Carpenter - Instrument Person (Surveying & Layout)	5/1/2017		\$39.35	\$27.59	\$66.94
Carpenter - Instrument Person (Surveying & Layout)	5/1/2018	4/30/2019	\$39.85	\$27.59	\$67.44
Carpenter - Instrument Person (Surveying & Layout)	5/1/2019		\$40.47	\$27.59	\$68.06
Carpenter - Instrument Person (Surveying & Layout)	5/1/2020		\$41.50	\$27.59	\$69.09
Carpenter - Instrument Person (Surveying & Layout)	5/1/2021		\$41.28	\$28.71	\$69.99
Carpenter - Rodman (Surveying & Layout)	5/1/2017		\$19.68	\$19.64	\$39.32
Carpenter - Rodman (Surveying & Layout)	5/1/2018	4/30/2019	\$19.93	\$19.49	\$39.42
Carpenter - Rodman (Surveying & Layout)	5/1/2019		\$20.24	\$19.69	\$39.93
Carpenter - Rodman (Surveying & Layout)	5/1/2020		\$20.75	\$19.49	\$40.24
Carpenter - Rodman (Surveying & Layout)	5/1/2021		\$20.64	\$20.31	\$40.95
Carpenters	5/1/2017		\$39.35	\$27.59	\$66.94
Carpenters	5/1/2018	4/30/2019	\$39.85	\$27.59	\$67.44
Carpenters	5/1/2019	4/30/2020	\$40.87	\$27.59	\$68.46
Carpenters	5/1/2020		\$41.90	\$27.59	\$69.49
Carpenters	5/1/2021		\$41.28	\$28.71	\$69.99
Carpenters	5/1/2022		\$42.53	\$28.71	\$71.24
Cement Masons	5/1/2017		\$36.45	\$31.76	\$68.21
Cement Masons	5/1/2018		\$37.50	\$32.26	\$69.76

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Cement Masons	5/1/2019		\$38.50	\$32.81	\$71.31
Cement Masons	5/1/2020		\$39.45	\$33.46	\$72.91
Cement Masons	5/1/2021		\$40.70	\$33.46	\$74.16
DockBuilder/ Divers (Building Heavy & Highway)	5/1/2020		\$52.44	\$37.27	\$89.71
DockBuilder/Pile Drivers (Building, Heavy & Highway)	5/1/2018		\$43.45	\$34.47	\$77.92
DockBuilder/Pile Drivers (Building, Heavy & Highway)	5/1/2020		\$43.70	\$37.27	\$80.97
DockBuilder/Pile Drivers/ Diver Tender(Building Heavy & Highway)	5/1/2020		\$43.70	\$37.27	\$80.97
Dockbuilder/Piledriver (Building, Heavy, Highway)	11/1/2017		\$43.45	\$33.22	\$76.67
Dockbuilder/Piledriver (Building, Heavy, Highway)	5/1/2018		\$44.70	\$33.22	\$77.92
Drywall Finisher	5/1/2017		\$37.11	\$26.75	\$63.86
Drywall Finisher	5/1/2018		\$39.27	\$27.49	\$66.76
Drywall Finisher	5/1/2019		\$37.75	\$28.11	\$65.86
Drywall Finisher	5/1/2020		\$38.27	\$28.59	\$66.86
Electricians	4/30/2017		\$56.50	\$36.24	\$92.74
Electricians	4/29/2018		\$58.33	\$37.41	\$95.74
Electricians	4/29/2019		\$59.79	\$38.95	\$98.74
Electricians	8/2/2020		\$61.93	\$40.31	\$102.24
Elevator Constructor	1/1/2018		\$55.76	\$33.05	\$88.81
Elevator Constructor	1/1/2020		\$59.44	\$35.25	\$94.69
Elevator Constructor	1/1/2021		\$61.43	\$36.36	\$97.79
Floor Coverer	5/1/2019		\$44.37	\$28.44	\$72.81
Floor Coverer	5/1/2020		\$46.01	\$28.44	\$74.45
Floor Coverer	5/1/2021		\$45.74	\$29.21	\$74.95
Floor Layer	5/1/2017		\$42.51	\$27.91	\$70.42
Floor Layer	5/1/2018		\$43.11	\$28.09	\$71.20
Glazier	5/1/2017		\$41.30	\$31.80	\$73.10
Glazier	5/1/2018		\$43.32	\$32.33	\$75.65
Glazier	5/1/2019		\$43.87	\$33.38	\$77.25
Glazier	5/1/2020		\$44.92	\$33.63	\$78.55
Glazier	5/1/2021		\$45.67	\$34.38	\$80.05
Interior Finish	5/1/2019		\$30.20	\$25.80	\$56.00
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2017		\$47.30	\$32.91	\$80.21
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2018		\$51.46	\$30.60	\$82.06
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2019		\$49.30	\$34.41	\$83.71
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	1/1/2020		\$49.80	\$34.41	\$84.21
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2020		\$50.80	\$34.91	\$85.71
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2021		\$47.70	\$39.51	\$87.21
Iron Workers (Riggers)	7/1/2017		\$39.83	\$27.92	\$67.75
Ironworker (Rodman)	7/1/2017		\$42.56	\$29.30	\$71.86
Ironworker (Rodman)	7/1/2018		\$42.88	\$30.60	\$73.48

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Ironworker (Rodman)	7/1/2019		\$43.88	\$30.85	\$74.73
Ironworker (Rodman)	7/1/2020		\$44.82	\$31.60	\$76.42
Laborers (Class 01 - See notes)	5/1/2017		\$28.65	\$24.95	\$53.60
Laborers (Class 01 - See notes)	5/1/2019		\$30.20	\$25.80	\$56.00
Laborers (Class 01 - See notes)	5/1/2020		\$32.05	\$25.25	\$57.30
Laborers (Class 02 - See notes)	5/1/2017		\$30.85	\$25.65	\$56.50
Laborers (Class 02 - See notes)	5/1/2019		\$33.15	\$26.50	\$59.65
Laborers (Class 02 - see notes)	5/1/2020		\$35.15	\$26.15	\$61.30
Laborers (Class 03 - See notes)	5/1/2017		\$28.92	\$25.18	\$54.10
Laborers (Class 03 - See notes)	5/1/2019		\$30.52	\$25.98	\$56.50
Laborers (Class 03 - See notes)	5/1/2020		\$32.47	\$25.43	\$57.90
Laborers (Class 04 - See notes)	5/1/2017		\$28.95	\$24.95	\$53.90
Laborers (Class 04 - See notes)	5/1/2019		\$30.52	\$25.98	\$56.50
Laborers (Class 04 - See notes)	5/1/2020		\$32.47	\$25.43	\$57.90
Laborers (Class 05 - See notes)	5/1/2017		\$28.65	\$24.95	\$53.60
Laborers (Class 05 - See notes)	5/1/2019		\$30.20	\$25.80	\$56.00
Laborers (Class 05 - See notes)	5/1/2020		\$32.05	\$25.25	\$57.30
Landscape Laborer	5/1/2017		\$22.71	\$23.08	\$45.79
Landscape Laborer	5/1/2019		\$24.64	\$23.68	\$48.32
Landscape Laborer	5/1/2020		\$26.55	\$23.13	\$49.68
Marble Finisher	5/1/2017		\$35.55	\$24.17	\$59.72
Marble Finisher	5/1/2018		\$37.55	\$24.17	\$61.72
Marble Finisher	5/1/2019		\$39.75	\$24.17	\$63.92
Marble Finisher	5/1/2020		\$37.57	\$27.65	\$65.22
Marble Mason	5/1/2017		\$40.36	\$26.99	\$67.35
Marble Mason	5/1/2018		\$43.11	\$26.99	\$70.10
Marble Mason	5/1/2019		\$45.86	\$26.99	\$72.85
Marble Mason	5/1/2020		\$44.25	\$30.10	\$74.35
Mason Tender, Cement	5/1/2019		\$30.52	\$25.98	\$56.50
Millwright	7/1/2017		\$41.35	\$32.24	\$73.59
Millwright	5/1/2018		\$43.33	\$32.96	\$76.29
Millwright	5/1/2019		\$45.50	\$33.29	\$78.79
Millwright	6/8/2020		\$46.80	\$33.19	\$79.99
Millwright	5/1/2021		\$48.60	\$33.19	\$81.79
Millwright	5/1/2022		\$50.60	\$33.19	\$83.79
Operators (Building, Class 01 - See Notes)	5/1/2017		\$44.87	\$28.14	\$73.01
Operators (Building, Class 01 - See Notes)	5/1/2018		\$46.41	\$28.60	\$75.01
Operators (Building, Class 01 - See Notes)	5/1/2019		\$46.41	\$30.60	\$77.01
Operators (Building, Class 01 - See Notes)	5/1/2020		\$47.96	\$31.05	\$79.01
Operators (Building, Class 01 - See Notes)	5/1/2021		\$49.50	\$31.51	\$81.01
Operators (Building, Class 01A - See Notes)	5/1/2017		\$47.86	\$29.03	\$76.89
Operators (Building, Class 01A - See Notes)	5/1/2018		\$49.41	\$29.49	\$78.90
Operators (Building, Class 01A - See Notes)	5/1/2019		\$49.41	\$31.49	\$80.90
Operators (Building, Class 01A - See Notes)	5/1/2020		\$50.96	\$31.94	\$82.90

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building, Class 01A - See Notes)	5/1/2021		\$52.51	\$32.39	\$84.90
Operators (Building, Class 02 - See Notes)	5/1/2017		\$44.62	\$28.07	\$72.69
Operators (Building, Class 02 - See Notes)	5/1/2018		\$46.16	\$28.53	\$74.69
Operators (Building, Class 02 - See Notes)	5/1/2019		\$46.16	\$30.53	\$76.69
Operators (Building, Class 02 - See Notes)	5/1/2020		\$47.71	\$30.98	\$78.69
Operators (Building, Class 02 - See Notes)	5/1/2021		\$49.25	\$31.44	\$80.69
Operators (Building, Class 02A - See Notes)	5/1/2017		\$47.61	\$28.97	\$76.58
Operators (Building, Class 02A - See Notes)	5/1/2018		\$49.16	\$29.42	\$78.58
Operators (Building, Class 02A - See Notes)	5/1/2019		\$49.17	\$31.41	\$80.58
Operators (Building, Class 02A - See Notes)	5/1/2020		\$50.71	\$31.87	\$82.58
Operators (Building, Class 02A - See Notes)	5/1/2021		\$52.26	\$32.32	\$84.58
Operators (Building, Class 03 - See Notes)	5/1/2017		\$40.53	\$26.87	\$67.40
Operators (Building, Class 03 - See Notes)	5/1/2018		\$42.07	\$27.33	\$69.40
Operators (Building, Class 03 - See Notes)	5/1/2019		\$42.08	\$29.32	\$71.40
Operators (Building, Class 03 - See Notes)	5/1/2020		\$43.62	\$29.78	\$73.40
Operators (Building, Class 03 - See Notes)	5/1/2021		\$45.16	\$30.24	\$75.40
Operators (Building, Class 04 - See Notes)	5/1/2017		\$40.24	\$26.78	\$67.02
Operators (Building, Class 04 - See Notes)	5/1/2018		\$41.78	\$27.22	\$69.00
Operators (Building, Class 04 - See Notes)	5/1/2019		\$41.78	\$29.23	\$71.01
Operators (Building, Class 04 - See Notes)	5/1/2020		\$43.32	\$29.69	\$73.01
Operators (Building, Class 04 - See Notes)	5/1/2021		\$44.87	\$30.14	\$75.01
Operators (Building, Class 05 - See Notes)	5/1/2017		\$38.51	\$26.27	\$64.78
Operators (Building, Class 05 - See Notes)	5/1/2018		\$40.05	\$26.73	\$66.78
Operators (Building, Class 05 - See Notes)	5/1/2019		\$40.06	\$28.72	\$68.78
Operators (Building, Class 05 - See Notes)	5/1/2020		\$41.60	\$29.18	\$70.78
Operators (Building, Class 05 - See Notes)	5/1/2021		\$43.14	\$29.64	\$72.78
Operators (Building, Class 06 - See Notes)	5/1/2017		\$37.52	\$25.98	\$63.50
Operators (Building, Class 06 - See Notes)	5/1/2018		\$39.07	\$26.43	\$65.50
Operators (Building, Class 06 - See Notes)	5/1/2019		\$39.07	\$28.43	\$67.50
Operators (Building, Class 06 - See Notes)	5/1/2020		\$40.61	\$28.89	\$69.50
Operators (Building, Class 06 - See Notes)	5/1/2021		\$42.16	\$29.34	\$71.50
Operators (Building, Class 07A- See Notes)	5/1/2017		\$54.14	\$32.47	\$86.61
Operators (Building, Class 07A- See Notes)	5/1/2018		\$55.99	\$33.02	\$89.01
Operators (Building, Class 07A- See Notes)	5/1/2019		\$56.30	\$35.11	\$91.41
Operators (Building, Class 07A- See Notes)	5/1/2020		\$58.16	\$35.65	\$93.81
Operators (Building, Class 07A- See Notes)	5/1/2021		\$60.00	\$36.21	\$96.21
Operators (Building, Class 07B- See Notes)	5/1/2017		\$53.84	\$32.40	\$86.24
Operators (Building, Class 07B- See Notes)	5/1/2018		\$55.70	\$32.92	\$88.62
Operators (Building, Class 07B- See Notes)	5/1/2019		\$56.00	\$35.03	\$91.03
Operators (Building, Class 07B- See Notes)	5/1/2020		\$57.86	\$35.57	\$93.43
Operators (Building, Class 07B- See Notes)	5/1/2021		\$59.72	\$36.11	\$95.83
Painters Class 1 (see notes)	5/1/2021		\$41.24	\$30.29	\$71.53
Painters Class 1 (see notes)	2/1/2022		\$48.62	\$30.29	\$78.91
Painters Class 2 (see notes)	2/1/2021		\$47.56	\$29.35	\$76.91

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Painters Class 2 (see notes)	2/1/2022		\$59.58	\$30.33	\$89.91
Painters Class 4 (see notes)	5/1/2021		\$41.62	\$30.29	\$71.91
Piledrivers	5/1/2021		\$43.73	\$37.99	\$81.72
Plasterers	5/2/2017		\$37.42	\$28.83	\$66.25
Plasterers	5/1/2018		\$37.42	\$30.04	\$67.46
Plasterers	5/1/2019		\$37.72	\$30.74	\$68.46
Plasterers	5/1/2020		\$38.12	\$31.34	\$69.46
Plasterers	5/1/2021		\$38.37	\$31.84	\$70.21
plumber	5/1/2018		\$53.45	\$33.54	\$86.99
plumber	5/1/2019		\$55.45	\$34.54	\$89.99
plumber	8/1/2020		\$57.33	\$35.66	\$92.99
plumber	5/1/2021		\$59.83	\$36.16	\$95.99
Plumbers	5/1/2017		\$51.42	\$32.57	\$83.99
Pointers, Caulkers, Cleaners	5/1/2017		\$42.26	\$25.69	\$67.95
Pointers, Caulkers, Cleaners	5/1/2018		\$45.01	\$25.69	\$70.70
Pointers, Caulkers, Cleaners	5/1/2019		\$47.76	\$25.69	\$73.45
Pointers, Caulkers, Cleaners	5/1/2020		\$45.75	\$29.20	\$74.95
Pointers, Caulkers, Cleaners	5/1/2021		\$46.75	\$29.50	\$76.25
Roofers (Composition)	5/1/2017		\$36.15	\$30.22	\$66.37
Roofers (Composition)	5/1/2018		\$37.15	\$31.27	\$68.42
Roofers (Composition)	5/1/2019		\$38.35	\$31.80	\$70.15
Roofers (Composition)	5/1/2021		\$40.33	\$33.12	\$73.45
Roofers (Shingle)	5/1/2016		\$25.70	\$19.17	\$44.87
Roofers (Shingle)	5/1/2019		\$28.50	\$20.87	\$49.37
Roofers (Shingle)	5/1/2020		\$29.50	\$21.25	\$50.75
Roofers (Shingle)	5/1/2021		\$30.50	\$21.55	\$52.05
Roofers (Slate & Tile)	5/1/2018		\$30.50	\$20.37	\$50.87
Roofers (Slate & Tile)	5/1/2019		\$31.50	\$20.87	\$52.37
Roofers (Slate & Tile)	5/1/2020		\$32.50	\$21.25	\$53.75
Roofers (Slate & Tile)	5/1/2021		\$33.50	\$21.55	\$55.05
Sheet Metal Workers	5/1/2017		\$46.42	\$39.51	\$85.93
Sheet Metal Workers	5/1/2018		\$47.58	\$41.60	\$89.18
Sheet Metal Workers	5/1/2019		\$49.79	\$42.89	\$92.68
Sheet Metal Workers	5/1/2020		\$52.04	\$44.19	\$96.23
Sheet Metal Workers	5/1/2021		\$53.84	\$45.94	\$99.78
Sign Makers and Hangars	7/17/2021		\$29.49	\$23.90	\$53.39
Sprinklerfitters	1/1/2018		\$53.65	\$26.22	\$79.87
Sprinklerfitters	5/1/2019		\$57.20	\$28.32	\$85.52
Sprinklerfitters	5/1/2020		\$59.10	\$29.22	\$88.32
Sprinklerfitters	5/1/2021		\$60.83	\$30.34	\$91.17
Steamfitters	5/1/2017		\$54.64	\$32.53	\$87.17
Steamfitters	5/1/2018		\$56.37	\$34.39	\$90.76
Steamfitters	5/1/2019		\$58.17	\$35.99	\$94.16
Steamfitters	5/1/2020		\$60.47	\$37.24	\$97.71

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Steamfitters	5/1/2021		\$60.47	\$40.89	\$101.36
Steamfitters	5/1/2022		\$60.47	\$44.63	\$105.10
Stone Masons	5/1/2017		\$40.36	\$26.99	\$67.35
Stone Masons	5/1/2018		\$43.11	\$26.99	\$70.10
Stone Masons	5/1/2019		\$45.86	\$26.99	\$72.85
Stone Masons	5/1/2020		\$44.25	\$30.10	\$74.35
Stone Masons	5/1/2021		\$44.90	\$30.75	\$75.65
Terrazzo Finisher	5/1/2017		\$39.06	\$22.73	\$61.79
Terrazzo Finisher	5/1/2018		\$41.31	\$22.73	\$64.04
Terrazzo Finisher	5/1/2019		\$43.61	\$22.73	\$66.34
Terrazzo Finisher	5/1/2020		\$41.46	\$26.37	\$67.83
Terrazzo Grinder	5/1/2017		\$39.33	\$22.73	\$62.06
Terrazzo Grinder	5/1/2018		\$41.58	\$22.73	\$64.31
Terrazzo Grinder	5/1/2019		\$43.88	\$22.73	\$66.61
Terrazzo Grinder	5/1/2020		\$41.73	\$26.37	\$68.10
Terrazzo Mechanics	5/1/2017		\$43.71	\$24.81	\$68.52
Terrazzo Mechanics	5/1/2018		\$46.46	\$24.81	\$71.27
Terrazzo Mechanics	5/1/2019		\$49.21	\$24.81	\$74.02
Terrazzo Mechanics	5/1/2020		\$47.51	\$28.01	\$75.52
Terrazzo Mechanics	5/1/2021		\$48.01	\$28.81	\$76.82
Tile Finisher	5/1/2017		\$35.55	\$24.17	\$59.72
Tile Finisher	5/1/2018		\$37.55	\$24.17	\$61.72
Tile Finisher	5/1/2019		\$39.75	\$24.17	\$63.92
Tile Finisher	5/1/2020		\$37.57	\$27.65	\$65.22
Tile Setter	5/1/2017		\$43.71	\$24.81	\$68.52
Tile Setter	5/1/2018		\$46.46	\$24.81	\$71.27
Tile Setter	5/1/2019		\$49.21	\$24.81	\$74.02
Tile Setter	5/1/2020		\$47.51	\$28.01	\$75.52
Truckdriver class 1(see notes)	5/1/2017		\$30.46	\$17.96	\$48.42
Truckdriver class 1(see notes)	5/1/2018		\$31.93	\$17.96	\$49.89
Truckdriver class 1(see notes)	5/1/2019		\$32.21	\$19.19	\$51.40
Truckdriver class 1(see notes)	5/1/2020		\$34.93	\$17.96	\$52.89
Truckdriver class 1(see notes)	5/1/2021		\$36.48	\$17.96	\$54.44
Truckdriver class 2 (see notes)	5/1/2017		\$30.56	\$17.96	\$48.52
Truckdriver class 2 (see notes)	5/1/2018		\$32.03	\$17.96	\$49.99
Truckdriver class 2 (see notes)	5/1/2019		\$32.31	\$19.19	\$51.50
Truckdriver class 2 (see notes)	5/1/2020		\$35.03	\$17.96	\$52.99
Truckdriver class 2 (see notes)	5/1/2021		\$36.58	\$17.96	\$54.54
Truckdriver class 3 (see notes)	5/1/2017		\$30.81	\$17.96	\$48.77
Truckdriver class 3 (see notes)	5/1/2018		\$32.28	\$17.96	\$50.24
Truckdriver class 3 (see notes)	5/1/2019		\$32.56	\$19.19	\$51.75
Truckdriver class 3 (see notes)	5/1/2020		\$35.28	\$17.96	\$53.24
Truckdriver class 3 (see notes)	5/1/2021		\$36.83	\$17.96	\$54.79
Window Film / Tint Installer	6/1/2019		\$24.52	\$12.08	\$36.60

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2017		\$51.42	\$27.39	\$78.81
Carpenter - Chief of Party (Surveying & Layout)	5/1/2018	4/30/2019	\$53.20	\$27.69	\$80.89
Carpenter - Chief of Party (Surveying & Layout)	5/1/2019	4/30/2020	\$55.38	\$27.69	\$83.07
Carpenter - Chief of Party (Surveying & Layout)	5/1/2020	4/30/2021	\$57.63	\$27.69	\$85.32
Carpenter - Chief of Party (Surveying & Layout)	5/1/2021		\$59.93	\$27.69	\$87.62
Carpenter - Instrument Person (Surveying & Layout)	5/1/2017		\$44.71	\$27.39	\$72.10
Carpenter - Instrument Person (Surveying & Layout)	5/1/2018	4/30/2019	\$46.26	\$27.69	\$73.95
Carpenter - Instrument Person (Surveying & Layout)	5/1/2019	4/30/2020	\$48.16	\$27.69	\$75.85
Carpenter - Instrument Person (Surveying & Layout)	5/1/2020	4/30/2021	\$50.11	\$27.69	\$77.80
Carpenter - Instrument Person (Surveying & Layout)	5/1/2021		\$52.11	\$27.69	\$79.80
Carpenter - Rodman (Surveying & Layout)	5/1/2017		\$35.77	\$21.19	\$56.96
Carpenter - Rodman (Surveying & Layout)	5/1/2018	4/30/2019	\$37.01	\$21.34	\$58.35
Carpenter - Rodman (Surveying & Layout)	5/1/2019	4/30/2020	\$38.53	\$21.34	\$59.87
Carpenter - Rodman (Surveying & Layout)	5/1/2020	4/30/2021	\$40.09	\$21.34	\$61.43
Carpenter - Rodman (Surveying & Layout)	5/1/2021		\$41.69	\$21.34	\$63.03
Carpenter	5/1/2018	4/30/2019	\$46.26	\$27.69	\$73.95
Carpenter	5/1/2019	4/30/2020	\$47.81	\$28.04	\$75.85
Carpenter	5/1/2020		\$49.46	\$28.34	\$77.80
Carpenter	5/1/2021		\$51.76	\$28.04	\$79.80
Cement Masons	5/1/2017		\$34.45	\$31.51	\$65.96
Cement Masons	5/1/2018		\$35.65	\$32.01	\$67.66
Cement Masons	5/1/2019		\$37.90	\$31.51	\$69.41
Cement Masons	5/1/2020		\$37.95	\$33.26	\$71.21
Cement Masons	5/1/2021		\$39.65	\$33.41	\$73.06
DockBuilder/ Divers (Building Heavy & Highway)	5/1/2020		\$52.44	\$37.27	\$89.71
DockBuilder/Pile Drivers/ Diver Tender(Building Heavy & Highway)	5/1/2020		\$43.70	\$37.27	\$80.97
Electric Lineman	5/29/2017		\$52.60	\$26.37	\$78.97
Electric Lineman	5/28/2018		\$53.64	\$27.45	\$81.09
Electric Lineman	5/27/2019		\$54.66	\$28.56	\$83.22
Electric Lineman	6/1/2020		\$55.96	\$29.76	\$85.72
Electric Lineman	5/31/2021		\$57.93	\$30.22	\$88.15
Electric Lineman	5/30/2022		\$59.17	\$31.48	\$90.65
Electric Lineman	5/29/2023		\$60.48	\$32.77	\$93.25
Electric Lineman	6/3/2024		\$62.07	\$33.96	\$96.03
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	1/1/2017		\$46.20	\$31.26	\$77.46
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2020		\$50.80	\$34.91	\$85.71
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2021		\$47.70	\$39.51	\$87.21
Iron Workers	7/1/2017		\$47.30	\$32.91	\$80.21
Iron Workers	7/1/2019		\$49.30	\$34.41	\$83.71
Iron Workers	1/1/2020		\$49.80	\$34.41	\$84.21
Ironworker (Rodman)	7/1/2020		\$44.82	\$31.60	\$76.42
Laborers (Class 01 - See notes)	5/1/2017		\$29.75	\$25.65	\$55.40

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 01 - See notes)	5/1/2018		\$31.25	\$25.65	\$56.90
Laborers (Class 01 - See notes)	5/1/2019		\$31.95	\$26.50	\$58.45
Laborers (Class 01 - See notes)	5/1/2020		\$33.95	\$26.15	\$60.10
Laborers (Class 01 - See notes)	5/1/2021		\$36.20	\$25.65	\$61.85
Laborers (Class 02 - See notes)	5/1/2017		\$29.95	\$25.65	\$55.60
Laborers (Class 02 - See notes)	5/1/2018		\$31.45	\$25.65	\$57.10
Laborers (Class 02 - See notes)	5/1/2019		\$32.15	\$26.50	\$58.65
Laborers (Class 02 - See notes)	5/1/2020		\$34.15	\$26.15	\$60.30
Laborers (Class 02 - See notes)	5/1/2021		\$36.40	\$25.65	\$62.05
Laborers (Class 03 - See notes)	5/1/2017		\$29.95	\$25.65	\$55.60
Laborers (Class 03 - See notes)	5/1/2018		\$31.45	\$25.65	\$57.10
Laborers (Class 03 - See notes)	5/1/2019		\$32.15	\$26.50	\$58.65
Laborers (Class 03 - See notes)	5/1/2020		\$34.15	\$26.15	\$60.30
Laborers (Class 03 - See notes)	5/1/2021		\$36.40	\$25.65	\$62.05
Laborers (Class 04 - See notes)	5/1/2017		\$24.55	\$25.65	\$50.20
Laborers (Class 04 - See notes)	5/1/2018		\$26.05	\$25.65	\$51.70
Laborers (Class 04 - See notes)	5/1/2019		\$26.75	\$26.50	\$53.25
Laborers (Class 04 - See notes)	5/1/2020		\$28.75	\$26.15	\$54.90
Laborers (Class 04 - See notes)	5/1/2021		\$31.00	\$25.65	\$56.65
Laborers (Class 05 - See notes)	5/1/2017		\$30.60	\$25.65	\$56.25
Laborers (Class 05 - See notes)	5/1/2018		\$32.10	\$25.65	\$57.75
Laborers (Class 05 - See notes)	5/1/2019		\$32.80	\$26.50	\$59.30
Laborers (Class 05 - See notes)	5/1/2020		\$34.80	\$26.15	\$60.95
Laborers (Class 05 - See notes)	5/1/2021		\$37.05	\$25.65	\$62.70
Laborers (Class 06 - See notes)	5/1/2017		\$30.65	\$25.65	\$56.30
Laborers (Class 06 - See notes)	5/1/2018		\$32.15	\$25.65	\$57.80
Laborers (Class 06 - See notes)	5/1/2019		\$32.85	\$26.50	\$59.35
Laborers (Class 06 - See notes)	5/1/2020		\$34.85	\$26.15	\$61.00
Laborers (Class 06 - See notes)	5/1/2021		\$37.10	\$25.65	\$62.75
Laborers (Class 07 - See notes)	5/1/2017		\$30.50	\$25.65	\$56.15
Laborers (Class 07 - See notes)	5/1/2018		\$32.00	\$25.65	\$57.65
Laborers (Class 07 - See notes)	5/1/2019		\$32.70	\$26.50	\$59.20
Laborers (Class 07 - See notes)	5/1/2020		\$34.70	\$26.15	\$60.85
Laborers (Class 07 - See notes)	5/1/2021		\$36.95	\$25.65	\$62.60
Laborers (Class 08 - See notes)	5/1/2017		\$30.25	\$25.65	\$55.90
Laborers (Class 08 - See notes)	5/1/2018		\$31.75	\$25.65	\$57.40
Laborers (Class 08 - See notes)	5/1/2019		\$32.45	\$26.50	\$58.95
Laborers (Class 08 - See notes)	5/1/2020		\$34.45	\$26.15	\$60.60
Laborers (Class 08 - See notes)	5/1/2021		\$36.70	\$25.65	\$62.35
Laborers (Class 09 - See notes)	5/1/2017		\$30.10	\$25.65	\$55.75
Laborers (Class 09 - See notes)	5/1/2018		\$31.60	\$25.65	\$57.25
Laborers (Class 09 - See notes)	5/1/2019		\$32.30	\$26.50	\$58.80
Laborers (Class 09 - See notes)	5/1/2020		\$34.30	\$26.15	\$60.45
Laborers (Class 09 - See notes)	5/1/2021		\$36.55	\$25.65	\$62.20

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 10- See notes)	5/1/2017		\$30.25	\$25.65	\$55.90
Laborers (Class 10- See notes)	5/1/2018		\$33.30	\$25.65	\$58.95
Laborers (Class 10- See notes)	5/1/2019		\$32.45	\$26.50	\$58.95
Laborers (Class 10- See notes)	5/1/2020		\$34.45	\$26.15	\$60.60
Laborers (Class 10- See notes)	5/1/2021		\$36.70	\$25.65	\$62.35
Laborers (Class 11 -See Notes)	5/1/2017		\$30.15	\$25.65	\$55.80
Laborers (Class 11 -See Notes)	5/1/2018		\$31.55	\$25.65	\$57.20
Laborers (Class 11 -See Notes)	5/1/2019		\$32.35	\$26.50	\$58.85
Laborers (Class 11 -See Notes)	5/1/2020		\$34.35	\$26.15	\$60.50
Laborers (Class 11 -See Notes)	5/1/2021		\$36.50	\$25.65	\$62.15
Laborers (Class 12 -See Notes)	5/1/2017		\$31.85	\$25.65	\$57.50
Laborers (Class 12 -See Notes)	5/1/2018		\$32.45	\$25.65	\$58.10
Laborers (Class 12 -See Notes)	5/1/2019		\$34.05	\$26.50	\$60.55
Laborers (Class 12 -See Notes)	5/1/2020		\$36.05	\$26.15	\$62.20
Laborers (Class 12 -See Notes)	5/1/2021		\$37.40	\$25.65	\$63.05
Laborers (Class 13 -See Notes)	5/1/2017		\$33.88	\$25.65	\$59.53
Laborers (Class 13 -See Notes)	5/1/2018		\$35.38	\$25.65	\$61.03
Laborers (Class 13 -See Notes)	5/1/2019		\$36.08	\$26.50	\$62.58
Laborers (Class 13 -See Notes)	5/1/2020		\$38.08	\$26.15	\$64.23
Laborers (Class 13 -See Notes)	5/1/2021		\$40.33	\$25.65	\$65.98
Laborers (Class 14 -See Notes)	5/1/2017		\$30.00	\$25.65	\$55.65
Laborers (Class 14 -See Notes)	5/1/2018		\$31.50	\$25.65	\$57.15
Laborers (Class 14 -See Notes)	5/1/2019		\$32.20	\$26.50	\$58.70
Laborers (Class 14 -See Notes)	5/1/2020		\$34.20	\$26.15	\$60.35
Laborers (Class 14 -See Notes)	5/1/2021		\$36.45	\$25.65	\$62.10
Laborers Utility (PGW ONLY) (Flagperson)	5/1/2017		\$23.52	\$17.58	\$41.10
Laborers Utility (PGW ONLY)	5/1/2017		\$30.55	\$17.58	\$48.13
Landscape Laborer	5/1/2016		\$21.19	\$22.65	\$43.84
Landscape Laborer	5/1/2019		\$24.22	\$23.50	\$47.72
Landscape Laborer	5/1/2020		\$26.13	\$22.95	\$49.08
Operators (Heavy, Class 05 - See Notes)	5/1/2019		\$40.06	\$28.72	\$68.78
Operators (Heavy, Class 06 - See Notes)	5/1/2019		\$39.07	\$28.43	\$67.50
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2017		\$44.87	\$28.14	\$73.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2018		\$46.41	\$28.60	\$75.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2019		\$46.41	\$30.60	\$77.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2020		\$47.96	\$31.20	\$79.16
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2021		\$49.50	\$31.51	\$81.01
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2017		\$47.86	\$29.03	\$76.89
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2018		\$49.41	\$29.49	\$78.90
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2019		\$49.41	\$31.49	\$80.90

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Highway)					
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2020		\$50.96	\$32.09	\$83.05
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2021		\$52.51	\$32.39	\$84.90
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2017		\$44.62	\$28.07	\$72.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2018		\$46.16	\$28.53	\$74.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2019		\$46.16	\$30.53	\$76.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2020		\$47.71	\$31.13	\$78.84
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2021		\$49.25	\$31.44	\$80.69
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2017		\$47.61	\$28.97	\$76.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2018		\$49.16	\$29.42	\$78.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2019		\$49.17	\$31.41	\$80.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2020		\$50.71	\$32.02	\$82.73
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2021		\$52.27	\$32.31	\$84.58
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2017		\$40.53	\$26.87	\$67.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2018		\$42.07	\$27.33	\$69.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2019		\$42.08	\$29.32	\$71.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2020		\$43.62	\$29.93	\$73.55
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2021		\$45.16	\$30.24	\$75.40
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2017		\$40.24	\$26.78	\$67.02
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2018		\$41.78	\$27.22	\$69.00
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2019		\$41.78	\$29.23	\$71.01
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2020		\$43.32	\$29.84	\$73.16
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2021		\$44.86	\$30.15	\$75.01
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2017		\$38.51	\$26.27	\$64.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2018		\$40.05	\$26.73	\$66.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2019		\$40.06	\$28.72	\$68.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2020		\$41.60	\$29.33	\$70.93

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2021		\$43.14	\$29.64	\$72.78
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2017		\$37.52	\$25.98	\$63.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2018		\$39.07	\$26.43	\$65.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2019		\$39.07	\$28.43	\$67.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2020		\$40.61	\$29.04	\$69.65
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2021		\$42.16	\$29.34	\$71.50
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2017		\$54.14	\$32.47	\$86.61
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2018		\$55.99	\$33.02	\$89.01
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2019		\$56.30	\$35.11	\$91.41
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2020		\$58.16	\$35.80	\$93.96
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2021		\$60.00	\$36.21	\$96.21
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2017		\$53.84	\$32.40	\$86.24
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2018		\$55.70	\$32.92	\$88.62
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2019		\$56.00	\$35.03	\$91.03
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2020		\$57.86	\$35.72	\$93.58
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2021		\$59.72	\$36.11	\$95.83
Painters Class 2 (see notes)	2/1/2021		\$47.56	\$29.35	\$76.91
Painters Class 2 (see notes)	2/1/2022		\$48.62	\$30.29	\$78.91
Painters Class 3 (see notes)	2/1/2021		\$58.52	\$29.39	\$87.91
Painters Class 3 (see notes)	2/1/2022		\$59.58	\$30.33	\$89.91
Piledrivers	5/1/2021		\$43.73	\$37.99	\$81.72
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2017		\$51.91	\$32.53	\$84.44
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2020		\$60.47	\$36.93	\$97.40
Steamfitters	5/1/2018		\$56.37	\$34.39	\$90.76
Truckdriver class 1(see notes)	5/1/2017		\$30.31	\$17.96	\$48.27
Truckdriver class 1(see notes)	5/1/2018		\$31.78	\$17.96	\$49.74
Truckdriver class 1(see notes)	5/1/2019		\$32.06	\$19.19	\$51.25
Truckdriver class 1(see notes)	5/1/2020		\$34.78	\$17.96	\$52.74
Truckdriver class 1(see notes)	5/1/2021		\$36.33	\$17.96	\$54.29
Truckdriver class 2 (see notes)	5/1/2017		\$30.41	\$17.96	\$48.37
Truckdriver class 2 (see notes)	5/1/2018		\$31.88	\$17.96	\$49.84
Truckdriver class 2 (see notes)	5/1/2019		\$32.16	\$19.19	\$51.35
Truckdriver class 2 (see notes)	5/1/2020		\$34.88	\$17.96	\$52.84
Truckdriver class 2 (see notes)	5/1/2021		\$36.43	\$17.96	\$54.39

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 22-01035 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Truckdriver class 3 (see notes)	5/1/2017		\$30.66	\$17.96	\$48.62
Truckdriver class 3 (see notes)	5/1/2018		\$32.13	\$17.96	\$50.09
Truckdriver class 3 (see notes)	5/1/2019		\$32.41	\$19.19	\$51.60
Truckdriver class 3 (see notes)	5/1/2020		\$35.13	\$17.96	\$53.09
Truckdriver class 3 (see notes)	5/1/2021		\$36.68	\$17.96	\$54.64

**FOLCROFT BOROUGH
CONTRACTOR RESPONSIBILITY CERTIFICATION FORM**

CONTRACTOR RESPONSIBILITY CERTIFICATION FORM

For simplicity, all contractors and subcontractors are designated as contractors herein below:

Contractor Name: _____ Date: _____

Contractor Address: _____

Contact Name: _____

Phone No.: _____ Fax No.: _____

Email Address: _____

Project Name: _____

Contractor certified by answering each of the questions below:

CHECK ONE FOR EACH QUESTION	YES	NO
(1) The Firm has all valid, effective licenses, registrations or certificates required by federal, state, county or local law, including by not limited to, licenses, registrations or certificates required to: (a) do business in the designated local; and (b) perform the contract work it seeks to perform. These shall include, but are not limited to, licenses, registrations or certificates for any type of trade work or specialty work which the Firm proposes to self-perform.		
(2) The Firm meets the bonding requirements for the contract, as required by applicable law or contract specifications and any insurance requirements, as required by applicable law or contract specifications, including general liability insurance, workers compensation insurance and unemployment insurance requirements.		
(3) The Firm has not been debarred by any federal, state or local government agency or authority in the past three (3) years.		
(4) The Firm has not defaulted on any project in the past three (3) years.		
(5) The Firm has not had any type of business, contracting or trade license, registration, or other certification suspended or revoked in the past three (3) years.		
(6) The Firm has not been cited for a willful violation of federal or state safety laws in the past three (3) years.		
(7) The Firm and its owners have not been convicted of any crime relating to the contracting business by a final decision of a court or government agency		

in the past ten years		
(8) The Firm has not within the past three years been found in violation of any law applicable to its contracting business, including but not limited to, licensing laws, tax laws, prompt payment laws, wage and hour laws, prevailing wage laws, environmental laws or others, where the result of such violation was the payment of a fine, back pay damages or any other type of penalty in the amount of \$1,000 or more.		
CHECK ONE FOR EACH QUESTION	YES	NO
(9) The Firm will pay all craft employees that it employs on the project the current wage rates and benefits as required under applicable federal, state, or local wage laws.		
(10) The Firm participates in a Class A Apprenticeship Program for each separate trade or classification in which it employs craft employees and shall continue to participate in such program or programs for the duration of the project.		
(11) The Firm has all other technical qualifications and resources, including equipment, personnel, and financial resources, to perform the referenced contract, or will obtain same through the use of qualified, responsible subcontractors.		
(12) The Firm will maintain all qualifications, resources and capabilities referenced in this certification throughout the duration of the project.		
(13) The Firm shall notify Folcroft Borough within seven (7) days of any material changes to all matters attested to in this certification.		
(14) The Firm understands that the Contractor Responsibility Certification required by this section shall be executed by a person who has sufficient knowledge to address all matters in the certification and shall include an attestation stating, under the penalty of perjury, that the information submitted is true, complete and accurate.		

NOTE: As required by the Ordinance, if the bidder receives a Notice of Intent to Award Contract, the bidder shall provide Folcroft Borough with a final subcontractor list and subcontractor information (including subcontractor certifications), if not previously provided.

VERIFICATION

I certify that the information contained in the Contractor Responsibility Certification is true and correct. I further understand that false statements made in this Certification may be subject to the penalties under the law related to unsworn falsification to authorities, including but not limited to, the penalties set forth in 18 Pa.C.S.. § 4904.

ATTACH ADDITIONAL SHEETS IF NECESSARY

Signature of Contractor's Authorized Representative: _____

Title: _____

Date: _____

SECTIONS 01000
GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

The Contract Documents consist of the Notice to Bidders, Instructions to Bidders, Form of Proposal, Articles of Agreement, General Conditions, Special Conditions, the Drawings, and the Specifications, including all modifications thereof incorporated in the documents before their execution. These form the Contract.

The term "Owner" as used herein refers to the Municipality or Party shown in the Notice to Bidders.

The term "Contractor" as used herein refers to the individual, firm, partnership, co-partnership or corporation who is mentioned as such in the agreement and is hereafter treated as of the singular number and masculine gender.

The term "Subcontractor" as used herein includes only those having direct contact with the Contractor and it includes one who furnished material worked to a special design according to the drawings and specifications of this work, but does not include one who furnished material not so worked.

The term "Engineer" as used herein refers to that company or person designated by the Owner or their representative having the work in charge.

The term "Work" of the Contractor or Subcontractor includes labor or materials or both.

The term "Substantial Completion" as herein used refers to that point in time in construction when all work is complete, all areas disturbed during construction are returned to their original condition, or better, and all excess material and equipment is removed from the site.

ARTICLE 2 - EXECUTION, CORRELATION AND INTENT OF DOCUMENTS

The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. The Engineer will decide as to the meaning or intent of any portion of the specifications or plans, where the same may be found obscure or in dispute, he shall have the right to correct any errors or omissions therein. All work that may be called for in the specifications and not shown on the plans, or shown on the plans and not called for in the specifications, shall be executed and furnished by the Contractor as if described in both ways; and should any incidental work or material be required which is not denoted in the specifications or plans, either directly or indirectly, but which is nevertheless necessary for proper carrying out of the intent thereof, the Contractor is to understand the same to be implied and required and shall perform all such work and furnish all such material as fully as if they were partially delineated or described, and without extra cost to the Owner.

ARTICLE 3 - DRAWINGS

Copies Furnished: Unless otherwise provided for in the Contract Documents, the Engineer will furnish to the Contractor, free of charge, copies of the Contract Drawings and Specifications reasonably necessary for the execution of the work.

Copies of the work: The Contractor shall keep one copy thereof of all drawings and specifications on the work in good order available to the Engineer and his representative.

Ownership of Plans: All drawings and specifications and copies thereof furnished by the Engineer are his property. They are to be returned to him on request at the completion of the work, prior to the time of final payment.

ARTICLE 4 - CONTRACTOR'S UNDERSTANDING

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature of and location of the work, the conformation of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work, general and local conditions, and all other matters which can in any way effect the work under this Contract. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this Contract, shall effect or modify any of the terms or obligations herein contained.

ARTICLE 5 - CHANGES IN THE WORK

The Engineer shall have the right to make such alterations in plans or in the character of the work as may be considered necessary or desirable from time to time to complete materially the original plans and specifications, provided such alterations do not change materially the original plans and specifications, and such alterations shall not be considered a waiver of any conditions of the Contract nor to invalidate any of the provisions thereof.

Should such alterations in the plans result in an increase or decrease in the quantity of work to be performed, without change in character, Contractor shall accept payment in full of the Contract unit price for the actual quantities of work done. Should such alterations in the character of the work be productive of increased cost or result in decreased cost to Contractor, a fair and equitable sum therefore shall be agreed upon in writing by Contractor and Engineer and approval by Owner before such work is begun, and shall be added to or deducted from as the case may be, the contract price, where a change involves the omission and addition of similar work, such work omitted shall be deducted from that added before any profit is computed. No allowance will be made for anticipated profits.

ARTICLE 6 - EXTRA WORK

Work and materials of a character for which no price is named in the Agreement shall be considered as extra work which shall be done by the Contractor only upon written order signed by the Engineer, at a price to be previously agreed upon in writing by the Contractor and the Engineer and approved by the Owner.

No bill or claim for extra work or materials shall be allowed or paid unless the doing of such work or furnishing of such extra materials shall have been authorized in writing by the Engineer.

If the Contractor shall proceed with such work after receiving the written authority therefore, as hereinbefore provided, then such extra work shall be controlled by all of the terms and provisions of this Contract, subject to such prices as are agreed upon and fixed by the Engineer and the Owner as hereinbefore provided.

If the Contractor shall fail or decline to perform such extra work as authorized in writing as aforesaid, the Owner may then arrange for the performance of the work in any manner he may see fit, the same as if the Contract had not been executed and the Contractor shall not interfere with such performance of the work, or the Owner may withhold payment of all estimated work until the Contractor's refusal or failure is eliminated. Any such extra cost to the Owner by reason of the Contractor's failure or refusal to perform such extra work shall be deducted from the amount due to Contractor under the terms of Contract.

ARTICLE 7 - FORCE ACCOUNT WORK

All extra work done on a force account basis will be paid for in the following manner:

For all labor, trucks, truck drivers, operators and foreman in direct charge of the specific operation, the Contractor shall receive the current local rate of wage, to be agreed upon in writing before starting such work, for each and every hour that said labor and/or trucks, truck drivers, operators and foremen are actually engaged on such work, to which shall be added an amount equal to 10% of the sum thereof.

For all materials used, the Contractor shall receive the actual cost of such materials including freight charges as shown by original receipted bills, to which cost shall be added a sum equal to 15%.

For any machinery or equipment, except small tools and equipment for which no rental is allowed, which may be deemed necessary or desirable to use, the Engineer, with the approval of the Owner, shall allow the Contractor a reasonable rental price for each and every hour that said machinery or equipment is in use on such work. Such rental price shall include fuel and lubrication and shall be agreed upon in writing by the Contractor and the Engineer and approved by the Owner before such work is begun. No percentages shall be added to such rental price.

The compensation as herein provided shall be received by the Contractor as payment in full for work done on a force account basis, the 15% which is allowed on cost of materials including freight charges being allowed and accepted for which no rental is allowed, overhead expense, including insurance and profit. The Contractor's representative and the Engineer's representative shall compare records of extra work done on a force account basis at the end of each day. All claims for extra work done on a force account basis shall be submitted to the Engineer by the Contractor, upon certified triplicate statements to which shall be attached original receipted bills covering the cost of and freight charges on all materials used in such work. Said statements shall be filed not later than the twentieth day of the month following that in which the work was actually performed and shall

include all labor charges, etc., and materials charges insofar as they can be verified. Should the Contractor refuse to prosecute the work as directed or to submit his claim as required, then the Engineer may withhold payment of all estimates until the Contractor's refusal or failure is eliminated.

ARTICLE 8 - EXAMINATION AND APPROVAL

All work and materials shall be at all times subject to the examination of and approval by the Engineer or his duly authorized representatives. The Contractor shall provide reasonable and necessary facilities for such examination. If any work should be covered up without the approval or consent of the Engineer, if required by him, it shall be uncovered for examination at the Contractor's expense.

ARTICLE 9 - DEFECTIVE WORK AND MATERIALS

Defective work and materials may be condemned by the Engineer at any time before the final acceptance of the work. The Contractor shall remove at his own expense any work or material condemned and shall rebuild and replace the same without extra cost. Previous examination will not relieve the Contractor from the responsibility for good work and materials whether overlooked by the Engineer or caused by damage from any source whatsoever.

Failure to conform with the above may be cause to discontinue the work, and Engineer and Owner in his or its discretion may either remedy the work or may have Contract completed by others and charge cost thereof as money paid Contractor.

ARTICLE 10 - MATERIALS, APPLIANCE AND EMPLOYEES

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of acceptable quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, light, power, transportation and other facilities necessary for the execution and prosecution of the work in an acceptable manner and at a satisfactory rate of progress. The equipment used on any portion of the work shall be such that no injury to adjacent property or highways will result from its use.

The Contractor shall employ such superintendent, foremen and workmen as are careful and competent, and the Engineer may demand the dismissal of any person employed by the Contractor in, about or upon the work, who shall be guilty of misconduct or be incompetent or negligent in the due and proper performance of duties, or who neglects or refuses to comply with the directions given, and such person shall not be employed again thereon without the written consent of the Engineer. Should the Contractor continue to employ or again employ such person, the Owner may withhold all estimates which are or may become due, or the Engineer may suspend the work, until such orders are complied with.

The Superintendent shall not be changed except with the consent of the Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and/or ceases to be in his employ. Superintendent shall represent the Contractor in his absence, and all directions given to him shall be as binding as if given to the Contractor. Other important directions shall be confirmed in writing to the Contractor. Other directions shall be confirmed on written request in each case.

ARTICLE 11 - ROYALTIES AND PATENTS

Contractor shall pay all royalties and license fees entailed by the use of any patented equipment, materials or methods of construction. He shall defend all suits and claims for infringements of any patent rights and shall save Owner harmless on account thereof, including any costs, council fees or any other expense harmless to which the Owner may be put by reason of his failure to defend such suit or suits.

ARTICLE 12 - SUPERVISION

The Contractor shall give sufficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the Engineer any error, inconsistency or omission which he may discover, but he shall not be held responsible for their existence or discovery.

ARTICLE 13 - PERMITS, LICENSES AND CERTIFICATES

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. He shall obtain and furnish the Engineer all required certificates for work for which certificates are issued. The Contractor shall pay all State, County, Municipal and Public Utility fees for permits, licenses, taxes, etc.

ARTICLE 14 - POINTS AND INSTRUCTIONS

The Contractor shall not proceed with the work until he has made timely demand upon the Engineer for, and has received from him, such reference points and instructions as may be necessary as the work progresses. The work shall be done in strict conformity with such points and instructions. Work done before the points and instructions are given by the Engineer shall be at the Contractor's risk, the Contractor shall furnish free of charge, all stakes and such temporary structures as may be necessary for making and maintaining points and lines and shall furnish the Engineer such facilities and materials for giving said lines and points as they may require. The Contractor must carefully preserve benchmarks, reference points and stakes, and in case of willful or careless destruction, he will be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

ARTICLE 15 - RIGHT-OF-WAY AND STORAGE SPACE

The Owner shall provide the land upon which the work is to be done, with right of access thereto, but unless otherwise agreed upon, the Contractor shall provide space and land required and access thereto for the erection of temporary construction facilities and for storage of materials.

ARTICLE 16 - DAMAGES TO PROPERTY

In case any direct or indirect injury is done to existing street or underground structures, sewer, mains, etc., or to public or private property of any kind or to any materials or fixtures, by or because of the work, in consequence of any act or omission on the part of the Contractor, his employees or agents, the Contractor at his own cost and expense, except when hereinafter specified otherwise, shall restore such structures, property, materials, etc., to a condition equal or similar to that existing before such damage or injury was done, by repairing or otherwise as may be directed by the Engineer, or shall make good such damage or injury in a satisfactory manner.

ARTICLE 17 - CONTRACTOR'S LIABILITY

The work in every respect, from the execution of the contract bond and during its progress until final acceptance, shall be under the charge and in the care of the Contractor and at his risk. He shall properly safeguard against any or all injury or damage to the public, any property, material or thing, except where stipulated otherwise in the specifications and shall alone be responsible for any damage or injury from his undertaking of this work to any person or persons or thing connected therewith. He shall indemnify and save harmless the Owner and all its officers, agents and employees from all suits or actions at law of any kind, including all costs, attorney's fees and any expense whatsoever in connection with this work, and shall, if required, show evidence of settlement of any such action before final payment is made by the Owner.

ARTICLE 18 - WORKER'S COMPENSATION ACT

The Contractor shall accept, insofar as the work covered by this contract is concerned, the provisions of the Worker's Compensation Act of 1915 and any supplements or amendments thereto, including any which may hereafter be passed, and shall insure his liability from the Bureau of Worker's Compensation of the Department of Labor and Industry; and all contracts with subcontractors shall obtain the obligation given above insuring that they likewise will be bound in like manner.

The Contractor shall at all times indemnify and save harmless the Owner from all claims for Worker's Compensation which may be made by any of the employees of the Contractor or by any of the employees of any subcontractor to whom the Contractor may have let the performance of any part of the work embraced in this Contract, and the Contractor will appear for and defend the Owner against any and all such claims.

ARTICLE 19 - PUBLIC SAFETY

During the progress of the work the Contractor shall provide watchmen and lights, fences and barriers, temporary passageways, danger warnings and detour signs, and take precautions as may be necessary to protect life and property, unless otherwise notified by the Engineer in writing.

ARTICLE 20 - OBSERVANCE OF LAWS

The Contractor, at all times, shall observe and comply with all Federal and State laws and local ordinances and regulations which in any manner effect the conduct of the work and all such orders or decrees as exist at present and those which may be enacted later by bodies or tribunals having any jurisdiction or authority over the work and shall indemnify and save harmless the Owner and all its officers, agents and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees.

ARTICLE 21 - SERVING NOTICES

Any notice to be given to the Contractor under this Contract shall be deemed to be served if the same be delivered to the man in charge of any office used by the Contractor, or his superintendent or agent at or near the work, or deposited in the post office, postpaid, addressed to the Contractor at this last known place of business.

ARTICLE 22 - SANITARY ACCOMMODATIONS

The Contractor shall provide and maintain in a neat and sanitary condition, such necessary accommodations for the use of his employees as may be approved by the Engineer and satisfactory to the sanitary authorities. No public nuisance shall be committed.

ARTICLE 23 - SUBLETTING OR ASSIGNING CONTRACT

The Contractor shall not sublet, sell, transfer or otherwise dispose of the Contract or any portion thereof, or of the work provided for therein, except for the furnishing of materials, or of his right, title or interest therein to any person, firm or corporation without the consent of the Engineer. No such assignment or subcontract, even though thus consented to, shall relieve the Contractor from his liability under the Contract for the performance and completion of the work by the time and in the manner contracted for.

The provisions of the Contract as to performance by the Contractor shall apply to any subcontractor, his officers, agents or employees of the subcontractor in all respects as if he and they were employees of the Contractor and they shall be subject to the same provisions thereby as employees of the Contractor, and the work and material furnished by any subcontractor shall be subject to the provisions as if furnished by the Contractor.

The Contractor shall, as soon as practicable after executing the Contract, notify the Engineer in writing of the names of subcontractors proposed for the work and shall not employ any that the Engineer may within a reasonable time object to as incompetent or unfit.

ARTICLE 24 - RIGHTS OF VARIOUS INTERESTS

Whenever work being done by other contractors or forces of the Owner is contiguous to work covered by this Contract, the respective rights of various interest involved shall be established by the Engineer, to secure the completion of the various portions of the work in general harmony.

ARTICLE 25 - DELAYS AND EXTENSION OF TIME

If the Contractor be delayed in the completion of the work by any cause beyond his control, then the time stated in the Agreement for the completion of the work may be extended by the Owner for a period equivalent to the actual number of calendar days lost be reason of any cause aforesaid. This length of extended period shall be determined and fixed by the Owner but an extension may not be allowed unless a claim therefore is presented in writing to the Engineer within seven days of the date of occurrence of the delay.

ARTICLE 26 - FAILURE TO COMPLY WITH ORDERS, ETC.

If the Engineer shall at any time be of the opinion that the Contractor is not progressing with the work as fast as necessary to insure its completion or to repair damage to public or private property, or is continuing to employ or re-employ negligent or careless persons, or is conducting the work in a manner disapproved by the Engineer, or is failing to prosecute the work in accordance with the provisions of the specifications, or if he stops or abandons the work on any part of the construction without the written consent of the Owner or is otherwise violating any of the provisions of the Contract, then the Engineer shall report such deficiencies and order him to remedy the same.

If, after ten (10) days from the date of such notice, the Contractor shall have failed to comply with, then the Owner may withhold all payments until the orders of the Owner are carried out, or it may suspend any or all work, or it may place additional forces, equipment, tools and materials on parts of the work at the Contractor's expense, as hereinafter specified, or it may annul the contract as hereinafter specified.

In case the Owner should augment the Contractor's forces, equipment, etc., as hereinabove provided, the cost incurred in carrying on such part of the work shall be deemed as to be carried out by the Owner on account of the Contractor, and the Contractor shall be allowed therefore the contract price and Owner may retain the amount of the cost of such work from any sum or sums due or to become due to the Contractor under this Contract, but if such cost exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

ARTICLE 27 - SUSPENSION OF WORK

The Owner reserves the right to suspend the whole or any part of the work contracted to be done when it is deemed to be in the best interest of the Owner to do so. In case of such suspension a proper extension of time will be allowed as provided in ARTICLE 25 if the suspension is due to no fault or neglect of the Contractor due to idle equipment or forces during such suspension period. Neither an extension of time, for any reason, beyond that fixed herein for the completion, nor the doing or acceptance of any part of the work called for by the contract shall be deemed to be a waiver by the Owner of the right to abrogate this Contract for abandonment or delays in the manner provided for in ARTICLE 3 of the Agreement.

ARTICLE 28 - ANNULMENT

The Bidders to whom the Contract is awarded must begin actual work on the ground within 10 days from the date of executing the Contract, or obtain from the Owner an extension of time. If the Contractor fails to begin the work in accordance with any notice or notices received from the Owner as provided in ARTICLE 26, or if the Contractor shall become insolvent or be declared bankrupt, or commit any act of bankruptcy or insolvency, or allow any final judgment based on any claim growing out of this Contract, to stand against him unsatisfied for a period of 48 hours, or shall make an assignment for the benefit of creditors, or from any other causes whatsoever shall not carry on the work in an acceptable manner, the Owner may give notice in writing to the Contractor and his Surety, of such delay, neglect or default, specifying the same and if the Contractor, within a period of 3 days after such notice, shall not proceed in accordance therewith, then the Owner shall have full power and authority, without violating the Contract, to take the prosecution of the work out of the hands of the Contractor, to appropriate or use of any or all materials and equipment on the ground that may be suitable and acceptable, to enter into an agreement, without advertising for bids thereof, for the completion of said contract according to the terms and provisions thereof, or to use such other methods as in its opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the Owner, together with the cost of completing the work under Contract, shall be deducted from any monies due or which may become due the Contractor. In case the expense so incurred by the Owner be less than the sum which would have been payable under the Contract if it had been completed by the Contractor, including the damages, then the Contractor shall be entitled to receive the difference, and in case such expense exceeds the sum which would have been payable under the Contract including the damages, then the Contractor and the Surety shall be liable and shall pay to the Owner the amount of said excess.

ARTICLE 29 - REMOVAL OF EQUIPMENT

In case of annulment of this Contract before its completion, from any cause whatsoever, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of his equipment and supplies from the site of the work, failing which, the Owner shall have the right to move such equipment and supplies at the expense of the Contractor. No equipment shall be removed from the work by the Contractor except as hereinbefore designated until the usefulness of such equipment on the work has ceased, and except with the written consent of the Engineer, otherwise such removal may be considered by the Owner as an abandonment of the work on the part of the Contractor.

ARTICLE 30 - ORDER OF COMPLETION AND USE OF COMPLETED PARTS

The Contractor shall complete any portion of the work in such order of time as may be stated in the specifications or as the Engineer may require. The Owner shall have the right to take possession of and use any completed or partially completed portion thereof of the work although the time for completing the entire work or portions thereof may not have expired; but such taking possession shall not be deemed an acceptance of the work so taken or used or any part thereof.

ARTICLE 31 - AUTHORITY OF ENGINEER

The Engineer shall have full authority to decide all questions which may arise with the Contractor relative to the quality and acceptability of materials furnished and work performed, the manner, performance and rate of progress, the interpretation of any and all plans and specifications and the acceptable fulfillment of the Contract on the part of the Contractor. The Engineer shall determine the amount and quantity of the several kinds of work performed and materials furnished and his decision and estimates shall be conclusive on the Contractor. Such estimates shall be a condition precedent to the right of the Contractor to receive any money due under the Contract.

ARTICLE 32 - PAYMENT OF LABOR AND MATERIALS

Contractor shall pay promptly all laborers or mechanics employed on the work embraced in these specifications, as well as all materials before final payment is made. Contractor shall furnish Owner with a release signed by all persons, firms, partnerships, corporations or bodies having furnished any material or materials for or toward the construction of said work and shall furnish to the Owner such evidence as may be required by the Owner that all labor and materials have been paid for.

ARTICLE 33 - MONTHLY ESTIMATES

As long as the work contracted for herein is executed in accordance with the provisions of this Contract and with such progress as may be satisfactory to the Owner, the Engineer on or about the (15TH) fifteenth day of each month will make an approximate estimate of the amount and value of the work done and material incorporated in the work by the Contractor according to the terms of this Contract from the last day covered by the previous estimate.

The Engineer may include in the estimate a reasonable amount of materials delivered at the site of the work, not to exceed 75% of the cost of said materials, which materials are acceptable for incorporation into the work but not used, provided however, that the Contractor shall produce receipted invoices certifying to the payment of such materials and shall submit to the Engineer delivery slips certifying to the delivery of such materials to the site of the work.

From the total of the Engineer's estimate shall be deducted 10% of the whole to be retained by the Owner, until after the completion of the Contract and its acceptances by the Owner, as well as previous payments and charges against the Contractor and the balance shall be the amount due the Contractor on the current estimate. These estimates will then be forwarded to the Owner and following approval of the Owner will be ordered paid.

It is understood and agreed that if the Owner at any time during the progress of the work, considered the amount withheld on account of the above mentioned percentage in excess of the amount necessary to complete the work or necessary for the full and ample protection of the Owner then the Owner may reduce the percentage retained to an amount sufficient for its proper protection.

For contracts exceeding \$50,000, retainage shall be deducted at the rate of ten percent of the amount due until fifty percent of the contract is completed. The sum or sums withheld after the Contract is 50% completed shall be five percent of the amount due, for the remaining work. In the event of a dispute between the contracting body and the prime contractor, which dispute is based on increased costs claimed by one prime contractor occasioned by delays or other actions of another prime contractor, additional retainage in the sum of one and one half times the amount of any possible liability may be withheld until such time as final resolution is agreed to by all parties directly or indirectly involved, unless the Contractor causing the additional claim furnishes a bond satisfactory to the contracting body to indemnify such contracting body against the claim.

No estimates given, or payments made, except final certificates of payment, shall be conclusive of the performance of the contract either wholly or in part, and no estimates or payments including the final estimate or payment shall be construed to be an acceptance of defective work or improper materials.

ARTICLE 34 - ACCEPTANCE AND FINAL PAYMENT

At such time as the Contractor shall have the work in condition for acceptance, he shall remove his equipment, all surplus materials, rubbish and debris resulting from or connected with the work and shall notify the Engineer that the work is ready for final inspection. If after the final inspection the Engineer shall determine that the Contractor has completed the construction contemplated by this Contract, performed the Contract on his part, the Engineer shall make a final estimate as to the entire amount of each class of work performed and as to the value thereof, with such increases or deductions as may have been made in accordance with the terms of the

Contract and such deductions on account of damages, as may be due to the Owner under the Contract, or of such additions as may be due to the Contractor, and shall certify to the Owner in writing with the aggregate amount of said final estimate at the completion of the work.

No payment shall become due and payable until the Contractor shall have furnished satisfactory evidence that all labor, materials, outstanding claims and indebtedness of whatever nature arising out of the performance of the Contract have been paid. The action of the Engineer by which the Contractor is to be bound and work concluded, according to the terms of the Contract, shall be evidence of the aforesaid certificate and final payment, all prior certificates or estimates upon which payments have been made being partial payment and subject to correction in the final payment.

Contracts exceeding \$50,000 shall be substantially complete if construction is sufficiently completed in accordance with Contract Documents and certified by the Engineer of the Contract body, as modified by change orders agreed to by the parties, so that the project can be used, occupied or operated for its intended use. In no event shall a project be certified as substantially complete until at least 90% of the work on the project is completed. The Contractor shall be paid in full except as provided in ARTICLE 33 within 30 days following the date of substantial completion, less only one and one half times such amount as is required to complete any then remaining uncompleted minor items which amount shall be certified by the Engineer and upon receipt by the contracting body of any guarantee bonds required, in accordance with the Contract Documents, to insure proper workmanship for a designated period of time. The certificate given by the Engineer shall list in detail each and every uncompleted item and a reasonable cost of completion. Final payment of any amount so withheld for the completion of the minor items shall be paid forthwith upon completion of the items in the certificate of the Engineer.

The acceptance of the final payment by the Contractor, made as aforesaid, shall operate as and be a release to the Owner and every member and agent thereof and from all claims and liabilities to the Contractor for anything done or furnished, for or relating to the work, or affecting the work, but this final payment shall not be considered relieving the Contractor from his indemnity obligation as described in ARTICLE 17.

ARTICLE 35 - CORRECTION OF WORK AFTER FINAL PAYMENT

Neither the final estimate nor final payment nor any provision in the Contract shall relieve the Contractor of the responsibility for faulty materials or workmanship, and he shall remedy without cost to the Owner any defects due thereto and pay any damage resulting therefrom, which shall appear within one year from the date of acceptance. (See Paragraph 8 - Instructions to Bidders)

ARTICLE 36 - QUANTITIES

The quantities given for unit price work are to be taken as approximate only. The unit price submitted will be applied to the completed work actually done, and the Contractor paid accordingly. Any variation between the actual quantities of work as constructed and the estimated quantities of work as given in the bidding sheet will be paid for at the unit price for that particular class of work.

ARTICLE 37 - DAMAGE ON ACCOUNT OF HIGH WATER, ETC.

The Contractor shall also hold himself responsible for all damage done to his work by heavy rains or floods, and he shall take all reasonable precautions to provide against damage by heavy rains to adjoining property by building such temporary channels to carry off the storm water as the nature of the work may require.

ARTICLE 38 - ENGINEER'S DECISION

Engineer shall have full authority to decide all questions which may arise with the Contractor relative to the quality and acceptability of materials furnished, and work performed, the manner, performance, rate of progress, the interpretation of any or all plans and specifications and the acceptable fulfillment of the Contract on the part of the Contractor. He shall determine the amount and quantity of the several kinds of work performed and the materials furnished, his decisions and estimates shall be conclusive on the Contractor, and such estimates shall be a condition precedent to the right of the Contractor to receive any money due the Contractor.

ARTICLE 39 - TIME FOR COMPLETION

Time allowed for completion of Contract from date of Notice to Proceed is specified by the Owner to the following:

Contract A Site Construction - 270 calendar days.
Contract B Building Construction - 270 calendar days.

ARTICLE 40 - DAMAGES FOR NOT COMPLETING WITHIN TIME LIMIT

Where actual damages for any delay in completion are impossible of determination by reason of the Owner's objection not to terminate the right of the Contractor to proceed, the Contractor and his Sureties shall be liable for and shall pay to the Owner the sum of \$500.00 as fixed, agreed and liquidated damages for each calendar day of such delay after the day fixed for completion, until the work is completed or accepted; Provided that the Owner may accept the work if there has been such a degree of completion as will in the Owner's opinion make the project reasonable safe, fit and convenient for the use and accommodation for which it was intended. In such case, the Contractor shall not be charged with liquidated damages, but the Owner may assess the actual damages caused by such delay.

ARTICLE 41 - MINIMUM WAGE SPECIFICATIONS

The specifications for every contract for any public work as defined herein shall contain at least the following conditions, provisions and requirements:

The general prevailing minimum wage rates including contributions for employee benefits as shall have been determined by the Secretary which must be paid to the workmen employed in the performance of the Contract are bound herewith.

The Contractor shall pay no less than the wage rates as determined in the decision of the Secretary of Labor and Industry and shall comply with the conditions of the Pennsylvania Prevailing Wage Act, approved August 15, 1961 (Act No. 442), as amended August 9, 1963 (Act No. 342), and the Regulations issued pursuant thereto.

The provisions of the Pennsylvania Prevailing Wage Act and the Regulations issued pursuant thereto are applicable to this Contract, and shall have the same force and effect as though herein written out in full.

The Contract provisions with respect to prevailing wage rates shall apply to all work performed on the Contract by the Contractor and to all work performed on the Contract by his Subcontractors, and the Contractor shall insert in each of his subcontracts all of the stipulations contained in these required provisions and such other stipulations as may be required by the Secretary of Labor and Industry.

No workmen may be employed on the public work except in accordance with the classifications set forth in the decision of the Secretary of Labor and Industry. In the event that additional or different classifications are necessary, the procedure set forth in Section 7 of the Regulations for the Pennsylvania Prevailing Wage Act shall be followed.

All workmen employed or working on the public work shall be paid unconditionally, regardless of whether any contractual relationship exists or the nature of any contractual relationship which be alleged to exist between any Contractor, Subcontractor and workmen, not less than once a week without deductions or rebate on any account either directly or indirectly, except authorized deductions, the full amounts due at the time of payment, computed at the rates applicable to the time worked in the appropriate classification. Nothing in the Contract, the Act or these Regulations shall prohibit the payment of more than the general prevailing minimum wage rates as determined by the Secretary to any workman on public work.

Contractor and each Subcontractor shall post for the entire period of construction the wage determination decisions of the Secretary, including the effective date of any changes thereof, in a prominent and easily accessible place or places at the site of the work and at such place or places used by them to pay workmen their wages. The posted notice of wage rates must contain the following information:

- (1) Name of project.
- (2) Name of public body for which it is being constructed.
- (3) The crafts and classifications of workmen listed in the Secretary's general prevailing minimum wage rates determination for the particular project.
- (4) The general prevailing minimum wage rates determined for each craft and classification and the effective date of any changes.
- (5) A statement advising workmen that if they have been paid less than the general prevailing minimum wage rate for their job classification or that the Contractor and/or Subcontractor are not complying with the Act or these regulations in any manner whatsoever, they may file a protest in writing with the Secretary of Labor and Industry within 3 months of the date of the occurrence, objection to the payment to any Contractor to the extent of the amount or amounts due or to become due to them as wages for

work performed on the public work project. Any workmen paid less than the rate specified in the Contract shall have a civil right of action for the difference between the wage paid and the wages stipulated in the Contract, which right of action must be exercised within 6 months from the occurrence of the event creating such right.

The Contractor and all Subcontractors shall keep an accurate record showing the name, craft and/or classification, number of hours worked per day, and the actual hourly rate of wage paid (including employee benefits) to each workman employed by him in connection with the public work and such record must include any deductions from each workman. The record shall be preserved for two years from the date of payment and shall be open at all reasonable hours to the inspection of the public body awarding the Contract and to the Secretary of Labor and Industry or his duly authorized representative.

Apprentices shall be limited to such numbers as shall be in accordance with a bona fide apprenticeship program registered with and approved by the Pennsylvania Apprenticeship and Training Council and only apprentices whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act approved July 14, 1961 (Act 304) and the Rules and Regulations issued pursuant thereto shall be employed on the public work project. Any workman using the tools of a craft who does not qualify as an apprentice within the provisions of the subsection shall be paid the rate predetermined for journey men in that particular craft and/or classification.

Wages shall be paid without any deductions except authorized deductions. Employers not parties to a contract requiring contributions for employee benefits which the Secretary has determined to be included in the general prevailing minimum wage rate shall pay the monetary equivalent thereof directly to the workmen.

Payment of compensation to workmen for work performed on public work on a lump sum or piece work basis or a price certain for completion of a certain amount of work, or the production of a certain result shall be deemed a violation of the Act and these regulations, regardless of the average hourly earnings resulting therefrom.

The Contract shall also provide that each Contractor and each Subcontractor shall file a statement each week and a final statement at the conclusion of the work on the Contract with the contracting agency, under oath and in a form satisfactory to the Secretary of Labor and Industry, certifying that all workmen have been paid wages in strict conformity with provisions of the Contract as prescribed by this Section 40 of the General Conditions, or if any wages remain unpaid to set forth the amount of wages due and owing to each workman respectively.

ARTICLE 42 - NONDISCRIMINATION IN EMPLOYMENT

The Contractor agrees that he will comply with the provisions of the Pennsylvania Human Relations Act in providing equal employment opportunities in connection with all work performed by him at the job site pursuant to this Contract. The Contractor, therefore, agrees:

- (1) The Contractor will not discriminate nor permit discrimination by his agents, servants or employees against any employee or applicant for employment with regard to hiring, tenure of employment, promotion, terms, conditions or privileges of employment, at the job site covered by this Contract, because of race, color, religion, age, or national origin, and will take such affirmative action as is hereinafter set forth to prevent same.
- (2) The Contractor will, in all publications or advertisements for employees to work at the job site covered by this Contract, place by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, age or national origin.
- (3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract understanding, a notice to be provided by the Pennsylvania Human Relations Commission, advising the said labor union or workers representative of the Contractor's commitment under this Section, and shall post copies of notice in conspicuous places available to employees and applicants for employment.
- (4) The Contractor shall supply the contracting agency of the State with a periodic report, called a "Compliance Report", relating to work performed at the job site under this Contract as may be required by the Pennsylvania Human Relations Commission. The Commission shall at all times have access to the employment records of said Contractor for purposes of investigation to ascertain compliance with the rules, regulations and orders of the Pennsylvania Human Relations Commission, relating to discrimination.
- (5) The Contractor shall insert the provisions of Paragraphs (1), (2) and (3) of this Article in all subcontracts which are entered into by the Contractor under this Contract requiring work to be done at the job site, as covenants to be binding upon such Subcontractors.

Compliance by the Contractor with Paragraphs (2) and (3) of this Article shall discharge the Contractor from any liability hereunder, relating to the nondiscriminatory provisions of this agreement.

ARTICLE 43 - THE LIABILITY OF SUBCONTRACTOR IN EMPLOYMENT

The Subcontractor of the Contractor under ARTICLE 42, shall have the same responsibilities and obligations as the Contractor to comply with provisions of ARTICLE 42, Paragraphs (1), (2) and (3) hereof and shall be subject to applicable penalties for failure to comply as hereinafter set forth in ARTICLE 44.

ARTICLE 44 - PENALTIES FOR FAILURE TO COMPLY

It is hereby agreed that the failure to comply with the foregoing requirements shall constitute a substantial breach of this Contract.

In the event the Pennsylvania Human Relations Commission, after investigation and hearing, shall determine that the Contractor or Subcontractor, as the case may be, has failed to comply with any of the provisions of ARTICLE 42, Paragraphs (1), (2) and (3) hereof, the Commission in addition to issuing any order it deems appropriate pursuant to Section 9 of the Pennsylvania Human Relations Act, shall certify such findings to the Contracting Agency of the State, with a recommendation for termination of the Contract or the Subcontractors, as the case may be, or with a recommendation that such Contractor be declared ineligible for any further public works contracts or subcontracts for a period of not more than 2 years from the date of such recommendations.

Should the Contracting Agency of the State adopt the recommendation to terminate the Contract, written notice of this fact shall be given to the Contractor by registered mail addressed to the Contractor's registered office in Pennsylvania, in which event all obligation on the part of the Contracting Agency to perform this Contract shall cease, save only the obligation to pay the Contractor the sum due, including any retained amounts, for all articles delivered or work done, or for all articles or equipment for which the Contractor may be liable, to the date of such termination.

Should the Contracting Agency of the State adopt the recommendation to direct the Contractor to terminate a subcontract entered into by the Contractor under this Contract, written notice of this fact shall be given to the Contractor by registered mail addressed to the Contractor's registered office in Pennsylvania, and it shall then be the obligation of the Contractor to terminate such Subcontract, pursuant to said written notice.

Should the Contracting Agency of the State adopt the recommendation to declare the Contractor or Subcontractor, as the case may be, ineligible for further public works contracts or subcontracts, written notice of this fact and of the duration of such period of ineligibility shall be given to the Contractor or Subcontractor by registered mail addressed to the Contractor's or Subcontractor's registered office in Pennsylvania.

ARTICLE 45 - RIGHT OF APPEAL

From any order of the Pennsylvania Human Relations Commission, the Contractor or Subcontractor, as the case may be, shall have a right of appeal as in other cases provided by law, and the Contracting Agency of the State shall not act upon the recommendation of the Commission specified in ARTICLE 44, paragraph (2) above until the Contractor or Subcontractor has exhausted the right of appeal provided by law, or the time for such appeal shall have expired.

ARTICLE 46 - INSPECTION

Representatives of any Federal and State government having jurisdiction shall have access to the work wherever it is in preparation of progress and the Contractor shall provide proper facilities for such access and inspection.

ARTICLE 47 - FEDERAL LABOR STANDARDS

The Contractor and all Subcontractors shall comply with the Regulations of the Secretary of Labor made pursuant to the Anti-Kickback Act of June 30, 1940, 40 U.S.C. 276 (C) and any amendments or modifications thereto. The Contractor and all Subcontractors shall furnish the Owner with weekly statements of Compliance. In case of Subcontracts, the Contractor shall cause appropriate provisions to be inserted on any Subcontracts for the work which he may let to insure compliance with said Anti-Kickback Act by all Subcontractors subject thereto, and Statements of Compliance required of Subcontractors by said Anti-Kickback Act except as the Secretary of Labor may specifically provide for reasonable limitations, variations and exemptions from the requirements thereof. These regulations are part of this Contract and are included in this Specification.

ARTICLE 48 - EXTRA WORK

In no case shall the Contractor proceed with extra work of additional quantity or dissimilar character unless written approval has been obtained from the Engineer. This paragraph supersedes all other Articles in these conditions. The Contractor shall initiate a change order prior to beginning such work unless such an order has come from the Engineer or Owner. The change order will specify the quantity and character of work to be performed and designate the cost of the work, both in units and total cost.

ARTICLE 49 - THEFT OF MATERIALS

The Theft of Materials must be covered by the Contractor. The Contractor must carry theft insurance in excess of the replacement value of the unused materials stored on site.

ARTICLE 50 – PUBLIC WORKS EMPLOYMENT VERIFICATION COMPLIANCE PROGRAM

The Commonwealth of Pennsylvania enacted Act 127 of 2012, known as the Public Works Employment Verification Act ('the Act') which requires all public work contractors and subcontractors to utilize the Federal Government's E-Verify system to ensure that all employees performing work on public work projects are authorized to work in the United States.

The Department defines a "Public Work" to be construction, reconstruction, demolition, alteration and/or repair work other than maintenance work, done under contract and paid for in whole or in part out of the funds of a public body where the estimated cost of the total project is in excess of twenty-five thousand dollars (\$25,000) but shall not include work performed under a rehabilitation or manpower training program.

The Department of General Services' Public Works Employment Verification Compliance Program is responsible for the administration, education and enforcement of the Public Works Employment Verification Act 127 of 2012. It provides contractors and subcontractors with educational outreach, conducts investigations when complaints are received and random audits to ensure compliance with the requirements of this Act.

Please direct your questions to the Public Works Employment Verification Compliance Office

Mail: Department of General Services Public Works
Employment Verification Compliance Office
Room 105 Tent Bldg.
18th & Herr Streets
Harrisburg, PA 17125

END OF GENERAL CONDITIONS

**SECTION 010001
SPECIAL CONDITIONS**

- I. It is intended by the execution of Contract A to perform all site work associated with the new Municipal Complex in Folcroft Borough. The site contractor will be responsible for all utility installation up to five (5') feet of the building footprint.

It is intended by the execution of Contract B to perform all building construction associated with the new Municipal Complex in Folcroft Borough. The building contractor is responsible for all utility installation and connections from the building footprint extending out a distance of five (5') feet. In addition, the building contractor will be responsible for coordinating with all utility companies for the installation and connections and coordination with the awarded site contractor.

- II. All areas disturbed by the Contractor shall be graded and seeded in accordance with these specifications and drawings.
- III. Prices shown on the proposal sheet shall include all labor, materials and equipment necessary to complete the work in a satisfactory manner, including restoration and cleanup.
- IV. All construction equipment operated on improved municipal streets and state highways shall be equipped with rubber tires or be otherwise insulated from the paving.
- V. During the construction procedure, the Contractor shall take all necessary precautions that may be required to prevent any physical damage or changes from occurring beyond the limits of the work or to buildings or structures adjacent to the proposed construction.
- VI. The Contractor shall maintain sufficient barricades and other warning signs during the progress of this work and both day and night shall maintain sufficient barricades, lights, danger signals and other devices for the safety of the public and the work must be conducted at all times in such a manner as to offer the least inconvenience to adjacent property owners.
- VII. Erosion Control: The Contractor shall be responsible for scheduling and implementing his work in such a way as to provide protection against any erosion of the subbase material and he shall generally conform to the Title 25 Rules and Regulations, Chapter 102 - Guidelines for Minimizing Erosion and Sediment.
- VIII. The Contractor shall be responsible beyond the limits of work for any and all damage to the existing structures due to faulty construction techniques.
- IX. Area to be occupied by Contractor: The Contractor shall confine his operation to the property lines as shown on the plan. The Contractor shall be responsible for damage resulting from trespassing upon adjacent lands, or damages to adjacent lands or property resulting from action of his agents and his employees. The Contractor shall indemnify the Owner against the performance of this Contract. The Contractor shall diligently and promptly report in writing to the Owner each such claim of injury or trespass asserted.
- X. Permits shall be waived. However, a contractor's license is required.
- XI. Each Contractor shall be responsible for cleaning of his refuse. Final inspection and payment will not be considered until this cleaning has been performed.
- XII. Temporary electric and water services required for construction shall be provided by the Contractor.
- XIII. Intoxicating Beverages: At no time shall the Contractor or his workmen deliver or consume intoxicating beverages of any kind during the daily work period.
- XIV. Performance of Work by Contractor: The Contractor shall perform on the site and with his own organization, work equivalent to at least 75% of the total amount of the work to be performed under the Contract. If, during the progress of the work hereinunder, the Contractor requests a reduction in such percentage, then the Engineer determines that it would be to the municipalities advantage, the

percentage of the work required to be performed by the Contractor may be reduced; provided written approval of such reduction is obtained by the Contractor from the Engineer.

- XV. Storage: The Contractor shall confine his apparatus, the storage of materials and the operations of his workmen, to limits indicated by law, ordinances, permits or directions of the municipality and shall not unreasonably encumber the premises with his materials.
- XVI. Toilet Facilities: Ample toilet facilities shall be furnished and maintained in strict conformity with State and Local county health laws by the Contractor for the use of his employees, the Engineer and the Inspector.
- XVII. Claims: The successful bidder to whom the Contract is awarded agrees hereby to indemnify and save harmless the municipality, the municipality's consulting engineer, and any of its employees from all suits, claims of any character, time and description brought for or on account of any injuries or damages received or sustained by any person persons, or property by or from the successful bidder or by or in consequence of any neglect in safeguarding the work or in the performance of the work, or through defective workmanship or materials or by or on account of any act, omission or misconduct of the successful bidder or any of his representatives, servants or employees.
- XVIII. Insurance: Insurance certificates, as follows, in a form satisfactory to the Municipal Solicitor shall be submitted at the time of executing the Contract: Statutory Worker's Compensation; Public Liability with Contractual Coverage in the amount of \$1,000,000/\$2,000,000; Property Damage in the amount of \$1,000,000/\$2,000,000 and \$100,000 respectively.
- Cancellation shall not be effective unless the Owner is notified in writing 20 days prior to the date of any proposed cancellation.
- XIX. Contractor shall comply with the Federal Occupational Safety and Health Act of 1970 (OSHA) including proper records keeping and reporting.
- XX. Contractor shall be responsible for maintaining all construction improvements for a period of one year from the date of completion in the form of a Maintenance Bond or as an item in the Performance Bond.
- XXI. Lines and Levels:
- Contractor, through competent personnel and use of instruments, shall determine all lines, grades and levels, verifying their accuracy from time to time during the progress of the work.
- Contractor shall work accurately to bench marks and to proper elevations and dimensions, checking conditions and details of work already in place and proposed in relation to work then to be installed.
- The method and instruments used for determining all grades, lines and levels shall first be approved by the Engineer.
- XXII. Non-Collusion Affidavit: The Non-Collusion Affidavit must be submitted along with the Bid proposal or the bid will be held to be invalid.
- XXIII. Compliance: Contractor shall comply with the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973; PA Act 235 of 1965, as amended, Universal Accessibility Act, and American's with Disabilities Act (ADA) of 1990.
- XXIV. "Or Equal" Clause: Whenever an item is specified by a manufacturer's name and model number, the Contractor may use a substitute of equal or better quality if approved in advance by the Engineer.
- XXV. Project Schedule Coordination: Coordination of Contract A – Site Construction and Contract B – Building Construction schedules will be the responsibility of the awarded Building Contractor (Contract B).

END OF SECTION

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Work under separate contracts.
 - 4. Contractor's use of site and premises.
 - 5. Work restrictions.
 - 6. Specification and drawing conventions.

- B. Related Requirements:

- 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: New Municipal Complex Along Ashland Avenue, Folcroft Borough

- 1. Project Location: Ashland Avenue, Folcroft PA, 19032

- B. Owner: Folcroft Borough, 1555 Elmwood Avenue, Folcroft PA 19032.

- 1. Owner's Representative: Andrew Hayman, Borough Manager

- C. Engineer: Elizabeth A. Catania, P.E., Borough Engineer, Catania Engineering Associates, Inc., 520 W. MacDade Boulevard, Milmont Park, PA 19033, Phone: 610-532-2884.

- D. Architect: Michael Cosentino, RA, Linn Architects, 1140 N. Providence Road, Media, PA 19063

- E. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

- 1. Structural: Paul Hopkins, P.E., S.E. TD&H Engineering.
 - 2. MEP: Derek Fink, P.E., Advanced Engineering.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:

1. The new construction of a one (1) story 10,207 square foot Police and Administration building, the new construction of a one (1) story 11,970 square foot Community Center and other associated site contraction indicated on the plans and in the specifications.

B. Type of Contract: Lump Sum

- C. Project will be constructed under coordinated, concurrent multiple contracts. See Section 011200 "Multiple Contract Summary" for a description of work included under each of the multiple contracts and for the responsibilities of Project coordinator. Contracts for this Project include the following:
 - a. Contract A: Site Construction.
 - b. Contract B: Building Construction

1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this contract or other contracts. Coordinate the work of this contract with work performed under separate contracts.

1.6 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Unrestricted Use of Site: Contractor shall have full use of project site for construction operations during construction period. Contractor's use of project site is limited only by Owner's right to perform work or retain other contractors on portions of the project.

1.7 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours per Borough requirements, Monday through Friday, unless otherwise indicated.
 1. Early Morning Hours: Refer to regulations per Borough requirements.
 2. Hours for Utility Shutdowns: Refer to regulations per Borough requirements
 3. Hours for Core Drilling: Refer to regulations per Borough requirements.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.

- D. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted. Smoking is not permitted within the building or within 25 feet of entrances, operable windows or outdoor air intakes.
- E. Contractor personnel working on Project site.
 - 1. Public Works Employment Verification Form.
 - 2. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 00: Contracting Requirements: general provisions of the contract, including General and Supplementary Conditions, apply to all sections of the specifications.
- C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations as noted on T-1 of the Architectural Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011200 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls.
- B. Specific requirements for Work of each contract are also indicated in individual Specification Sections and on Drawings.
- C. Related Requirements:
 - 1. Section 011000 "Summary" for the Work covered by the Contract Documents, restrictions on use of Project site, coordination with occupants, and work restrictions.
 - 2. Section 013100 "Project Management and Coordination" for general coordination requirements.

1.3 PROJECT COORDINATOR

- A. The Building Construction Contractor shall be responsible for coordination between the following contracts:
 - 1. Site Construction Contract

1.4 PROJECT COORDINATOR ACTIVITIES

- A. Coordination activities of Project coordinator activities for the multiple contracts including, but are not limited to, the following:
 - 1. Provide overall coordination of the Work.
 - 2. Coordinate shared access to workspaces.
 - 3. Coordinate product selections for compatibility.
 - 4. Provide overall coordination of temporary facilities and controls.
 - 5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
 - 6. Coordinate construction and operations of the Work with work performed by each Contract and separate contracts.
 - 7. Prepare coordination drawings in collaboration with each contractor to coordinate work by more than one contract.

8. Coordinate sequencing and scheduling of the Work. Include the following:
 - a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
 - b. Prepare combined Contractors' Construction Schedule for entire Project. Base schedule on preliminary construction schedule. Secure time commitments for performing critical construction activities from contractors. Show activities of each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.
 - 1) Submit schedules for approval.
 - 2) Distribute copies of approved schedules to contractors.
9. Provide photographic documentation.
10. Provide quality-assurance and quality-control services specified in Section 014000 "Quality Requirements."
11. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
12. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
13. Locate existing permanent benchmarks, control points, and similar reference points, and establish permanent benchmarks on Project site.
14. Provide field surveys of in-progress construction and site work.
15. Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
16. Coordinate cutting and patching.
17. Coordinate protection of the Work.
18. Coordinate firestopping.
19. Coordinate completion of interrelated punch list items.
20. Coordinate preparation of Project Record Documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
21. Print and submit Record Documents if installations by more than one contractor are indicated on the same Contract Drawing or Shop Drawing.
22. Collect record Specification Sections from contractors, collate Sections into numeric order, and submit complete set.
23. Coordinate preparation of operation and maintenance manuals if information from more than one contractor is to be integrated with information from other contractors to form one combined record.

1.5 GENERAL REQUIREMENTS OF CONTRACTS

- A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
 1. Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.

2. Trenches and other excavation for the work of each contract shall be the work of each contract for its own work.
3. Blocking, backing panels, sleeves, and metal fabrication supports for the work of each contract shall be the work of each contract for its own work.
4. Furnishing of access panels for the work of each contract shall be the work of each contract for its own work. Installation of access panels shall be the work of the General Construction Contract.
5. Equipment pads for the work of each contract shall be the work of the General Construction Contract, unless noted otherwise.
6. Equipment roof curbs and pipe/conduit sleeves shall be furnished by each trade contract for its own work and installed by the General Construction Contract.
7. Flashing: Base flashing for roof penetrations shall be provided by the General Construction Contract. Counter flashing for the work of each Contract shall be by each Contract for its own work.
8. Painting for the work of each contract shall be the work of the General Construction Contract.
9. Cutting and Patching: Each contract shall perform its own cutting; patching shall be under the General Construction Contract.
10. Through-penetration firestopping for the work of each contract shall be provided by the General Construction Contract.
11. Contractors' Startup Construction Schedule: Within five working days after startup horizontal bar-chart-type construction schedule and preliminary network diagram submittal has been received from Project coordinator, submit a matching startup horizontal bar-chart schedule and startup network diagram showing construction operations sequenced and coordinated with overall construction.

B. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the work.

1. Project coordinator shall coordinate substitutions.

C. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Section 015000 "Temporary Facilities and Controls," each contractor is responsible for the following:

1. Installation, operation, maintenance, and removal of each temporary facility necessary for its own normal construction activity, and costs and use charges associated with each facility, except as otherwise provided for in this Section.
2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
3. Its own storage and fabrication sheds.
4. Temporary enclosures for its own construction activities.
5. Staging and scaffolding for its own construction activities.
6. General hoisting facilities for its own construction activities, up to 2 tons.
7. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
8. Progress cleaning of work areas affected by its operations on a daily basis.
9. Secure lockup of its own tools, materials, and equipment.
10. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

D. Use Charges: Comply with the following:

1. Sewer Service: Include the cost for sewer service use by all parties engaged in construction activities at Project site in the General Construction Contract.
2. Water Service: Include the cost for water service, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site in the General Construction Contract.
3. Electric Power Service: Include the cost for electric power service, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site in the General Construction Contract.

1.6 GENERAL CONSTRUCTION CONTRACT

A. Work of the Building Construction Contract includes, but is not limited to, the following:

1. Remaining work not identified as work under other contracts.
2. Foundations, including footings, foundation walls, and piles.
3. Slabs-on-grade, including earthwork, subdrainage systems, and insulation.
4. Below-grade building construction, including excavation, backfill, and thermal and moisture protection.
5. Superstructure, including floor and roof construction.
6. Exterior closure, including walls, doors, windows.
7. Roofing, including coverings, flashings.
8. Interior construction, including partitions, doors, interior glazed openings, and fittings.
9. Interior finishes finish carpentry architectural woodwork.
10. Miscellaneous items, including concrete equipment bases and painting of mechanical and electrical work.
11. Equipment, including the following:
 - a. Bathroom Accessories.
12. Special construction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

1.5 PROCEDURES

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

1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710 or web-based Project management software.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES

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

1.5 CONSTRUCTION CHANGE DIRECTIVE

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

1.6 WORK CHANGE DIRECTIVE

- A. Work Change Directive: Architect may issue a Work Change Directive on form provided as part of web-based Project management software. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Arrange schedule of values consistent with format of AIA Document G703.
 - 2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - 3. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 - 4. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 - 5. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
 - 6. Closeout Costs: Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
 - 7. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: Submit Application for Payment to Architect by the 1st of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
 - 1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 - 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Products list (preliminary if not final).
 5. Schedule of unit prices.
 6. Submittal schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Data needed to acquire Owner's insurance.
- H. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706.
 5. AIA Document G706A.
 6. AIA Document G707.
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013216 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Bar Chart Schedules
- D. Review and Evaluation.
- E. Updating Schedules.
- F. Distribution.

1.2 SUBMITTALS

- A. Within ten (10) days after date established in Notice to Proceed, submit proposed preliminary construction progress schedule.
- B. Participate in review of preliminary and complete construction progress schedule jointly with Engineer/Engineer.
- C. Within five (5) days after joint review of proposed preliminary construction progress schedule, submit draft of proposed final construction progress schedule for review. Include written certification that other prime contractors have reviewed and accepted proposed schedule.
- D. Schedule Updates:
 - 1. Overall percent complete, projected and actual.
 - 2. Completion progress by listed activity and subactivity, to within five days prior to submittal.
 - 3. Changes in Work scope and activities modified since submittal.
 - 4. Delays in submittals or resubmittals, deliveries, or Work.
 - 5. Adjusted or modified sequences of Work.
 - 6. Other identifiable changes.
 - 7. Revised projections of progress and completion.
- E. Narrative Progress Report:
 - 1. Submit with each submission of Progress Schedule.
 - 2. Summary of Work completed during the past period between reports.
 - 3. Work planned during the next period.
 - 4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.

5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
6. Corrective action taken or proposed.

1.3 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel specializing in CPM scheduling with two years' minimum experience in scheduling construction work of complexity comparable to the Project.

1.4 BAR CHART SCHEDULES

- A. Format: Bar chart Schedule, to include at least:
 - B.
 1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
 - a. Subcontract Work.
 - b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - c. Move-in and other preliminary activities.
 - d. Equipment and equipment system test and startup activities.
 - e. Project closeout and cleanup.
 - f. Work sequences, constraints and milestones.
 2. Listings identified by Specification Section number.
 3. Identification of the following:
 - a. Horizontal time frame by year, month, and week.
 - b. Duration, early start, and completion for each activity and subactivity.
 - c. Critical activities and Project float.
 - d. Subschedules to further define critical portions or Work.

1.5 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of schedules with Engineer/Engineer at each submittal.
- B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise schedules incorporating results of review, and resubmit within 5 days.

1.6 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Annotate schedules to depict current status of Work.

- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submitted.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit sorts as required to support recommended changes.
- G. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect including effects of changes on schedules of separate Contractors.

1.7 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, to Subcontractors, suppliers, Engineer/Engineer, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 -EXECUTION –

- A. Reliance upon the approved schedule:
 - 1. The final construction progress schedule as approved by the Engineer will be an integral part of the contract and will establish interim completion dates for the various activities under the contract.
 - 2. Should any activity not be completed within 3 days after the stated schedule date, the Owner shall have the right to require the contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.
 - 3. Should any activity be 10 days or more behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.
 - 4. Costs incurred by the Owner and by the Engineer in connection with expediting construction activity under this Article shall be reimbursed by the Contractor.
 - 5. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.

END OF SECTION 013216

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final completion construction photographs.
 - 4. Preconstruction video recordings.
 - 5. Periodic construction video recordings.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
 - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Section 024119 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.
 - 4. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For photographer.
- B. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
 - 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Engineer and Construction Manager.
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.

- C. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.
1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight, commercial-grade photographic paper; mounted on linen or card stock to allow a 1-inch-wide margin and enclosed back to back in clear plastic sleeves that are punched for standard three-ring binder.
 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Engineer and Construction Manager.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.
- D. Video Recordings: Submit video recordings within seven days of recording.
1. Submit video recordings in digital video disc format acceptable to Engineer.
 2. Identification: With each submittal, provide the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Engineer and Construction Manager.
 - d. Name of Contractor.
 - e. Date video recording was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Weather conditions at time of recording.
 3. Transcript: Prepared on 8-1/2-by-11-inch (215-by-280-mm) paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

1.4 QUALITY ASSURANCE

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

1.5 USAGE RIGHTS

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

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.
- B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to Engineer.
- C. Wireless Hand-Held Camera: Provide portable camera system capable of producing images complying with requirements in this Section, with wireless transmission to service provider's network enabling a live image stream viewable by multiple parties.
 - 1. Provide battery charger, spare battery pack, base station hub, and base station connections in a number and distribution adequate to enable wireless camera operation throughout Project site.
 - 2. Provide power supply, active high-speed data connection to service provider's network, and static public IP address at base station hub. Provide power supply, conduit, and data wiring between base station hub and base station connections.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Engineer and Construction Manager.
- D. Preconstruction Photographs: Before commencement of excavation commencement of demolition starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take 20 photographs of existing buildings either on or adjoining property to accurately

- record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take 20 photographs bi-weekly with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Engineer-Directed Construction Photographs: From time to time, Engineer will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Final Completion Construction Photographs: Take 40 color photographs after date of Substantial Completion for submission as project record documents. Engineer will inform photographer of desired vantage points.
1. Do include date stamp.
- H. Additional Photographs: Engineer or Construction Manager may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum or in the allowance for construction photographs.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

3.2 CONSTRUCTION VIDEO RECORDINGS

- A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.
- B. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.
- C. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.
1. Confirm date and time at beginning and end of recording.

2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.
- D. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.
 - E. Preconstruction Video Recording: Before starting demolition, record video recording of Project site and surrounding properties from different vantage points, as directed by Engineer.
 1. Flag construction limits before recording construction video recordings.
 2. Show existing conditions adjacent to Project site before starting the Work.
 3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of excavation demolition construction.
 4. Show protection efforts by Contractor.
 - F. Periodic Construction Video Recordings: Record video recording monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last video recordings were recorded. Minimum recording time shall be 30 minutes(s).

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections:
 - 1. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 2. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 4. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

- a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of an Agreement form acceptable to the Owner and Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

- j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.
- E. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
 - 1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
 - 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 - 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 - 4. Include the following information on an inserted cover sheet:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Name of subcontractor.
 - h. Name of supplier.
 - i. Name of manufacturer.
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Other necessary identification.
- F. Options: Identify options requiring selection by the Architect.
- G. Deviations: Identify deviations from the Contract Documents on submittals.
- H. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - 1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
- I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

1. Transmittal Form: Use CSI Form 12.1A.
 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Action Submittals: Submit six paper copies of each submittal, unless otherwise indicated. Architect will return three copies.
 3. Informational Submittals: Submit three paper copies of each submittal, unless otherwise indicated. Architect will not return copies.
 4. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
 5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

6. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of Product Data, unless otherwise indicated. Architect will return two copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based upon Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1067 mm).
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - b. Six opaque (bond) copies of each submittal. Architect will return four copies.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit two sets of Samples. Architect will retain two Sample sets.

- 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Submit product schedule in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

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

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed and tested at testing facility to verify performance characteristics.
 2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.
 3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes; doors; windows; millwork; casework; specialties; furnishings and equipment; and lighting.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.3 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1.4 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

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

1.5 ACTION SUBMITTALS

- A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, telephone number, and email address of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.

8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Statement on condition of substrates and their acceptability for installation of product.
 2. Statement that products at Project site comply with requirements.
 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 5. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Statement that equipment complies with requirements.
 2. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 3. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - d. When testing is complete, remove test specimens and test assemblies, and mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.
 2. Build mockups in location indicated or, if not indicated, as directed by Architect.
 3. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
 5. Demonstrate the proposed range of aesthetic effects and workmanship.
 6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 8. Demolish and remove mockups when directed unless otherwise indicated.
- L. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.9 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Engage a qualified testing agency to perform quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform duties of Contractor.
- E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 6. Security and protection for samples and for testing and inspection equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

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

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
 - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. **[Abbreviations and acronyms not included in this list shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."]**The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. AABC - Associated Air Balance Council; www.aabc.com.
 2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
 3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
 4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
 5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
 6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
 7. ABMA - American Boiler Manufacturers Association; www.abma.com.
 8. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org.
 9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
 10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
 11. AF&PA - American Forest & Paper Association; www.afandpa.org.
 12. AGA - American Gas Association; www.aga.org.
 13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
 14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
 15. AI - Asphalt Institute; www.asphaltinstitute.org.
 16. AIA - American Institute of Architects (The); www.aia.org.
 17. AISC - American Institute of Steel Construction; www.aisc.org.
 18. AISI - American Iron and Steel Institute; www.steel.org.
 19. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
 20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
 21. ANSI - American National Standards Institute; www.ansi.org.
 22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
 23. APA - APA - The Engineered Wood Association; www.apawood.org.
 24. APA - Architectural Precast Association; www.archprecast.org.
 25. API - American Petroleum Institute; www.api.org.
 26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
 27. ARI - American Refrigeration Institute; (See AHRI).

28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
34. ASSP - American Society of Safety Professionals (The); www.assp.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AVIXA - Audiovisual and Integrated Experience Association; (Formerly: Infocomm International); www.soundandcommunications.com.
38. AWEA - American Wind Energy Association; www.awea.org.
39. AWI - Architectural Woodwork Institute; www.awinet.org.
40. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
41. AWPA - American Wood Protection Association; www.awpa.com.
42. AWS - American Welding Society; www.aws.org.
43. AWWA - American Water Works Association; www.awwa.org.
44. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
45. BIA - Brick Industry Association (The); www.gobrick.com.
46. BICSI - BICSI, Inc.; www.bicsi.org.
47. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
48. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
49. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
50. CDA - Copper Development Association; www.copper.org.
51. CE - Conformite Europeenne; <http://ec.europa.eu/growth/single-market/ce-marking/>.
52. CEA - Canadian Electricity Association; www.electricity.ca.
53. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
54. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
55. CGA - Compressed Gas Association; www.cganet.com.
56. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
57. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
58. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
59. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
60. CPA - Composite Panel Association; www.compositepanel.org.
61. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
62. CRRC - Cool Roof Rating Council; www.coolroofs.org.
63. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
64. CSA - CSA Group; www.csa-group.org.
65. CSI - Construction Specifications Institute (The); www.csiresources.org.
66. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
67. CTA - Consumer Technology Association; www.cta.tech.
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.coolingtechnology.org.
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.

71. DHA - Decorative Hardwoods Association; (Formerly: Hardwood Plywood & Veneer Association); www.decorativehardwoods.org.
72. DHI - Door and Hardware Institute; www.dhi.org.
73. ECA - Electronic Components Association; (See ECIA).
74. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
75. ECIA - Electronic Components Industry Association; www.eciaonline.org.
76. EIA - Electronic Industries Alliance; (See TIA).
77. EIMA - EIFS Industry Members Association; www.eima.com.
78. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
79. EOS/ESD Association; (Electrostatic Discharge Association); www.esda.org.
80. ESTA - Entertainment Services and Technology Association; (See PLASA).
81. ETL - Intertek (See Intertek); www.intertek.com.
82. EVO - Efficiency Valuation Organization; www.evo-world.org.
83. FCI - Fluid Controls Institute; www.fluidcontrolsintstitute.org.
84. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
85. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
86. FM Approvals - FM Approvals LLC; www.fmglobal.com.
87. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
88. FRSA - Florida Roofing, Sheet Metal Contractors Association, Inc.; www.floridarooft.com.
89. FSA - Fluid Sealing Association; www.fluidsealing.com.
90. FSC - Forest Stewardship Council U.S.; www.fscus.org.
91. GA - Gypsum Association; www.gypsum.org.
92. GANA - Glass Association of North America; (See NGA).
93. GS - Green Seal; www.greenseal.org.
94. HI - Hydraulic Institute; www.pumps.org.
95. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
96. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
97. HPVA - Hardwood Plywood & Veneer Association; (See DHA).
98. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
99. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
100. IAS - International Accreditation Service; www.iasonline.org.
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; www.iccsafe.org.
103. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
104. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
105. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
106. IEC - International Electrotechnical Commission; www.iec.ch.
107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
109. IESNA - Illuminating Engineering Society of North America; (See IES).
110. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
111. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
112. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.org.
113. II - Infocomm International; (See AVIXA).
114. ILI - Indiana Limestone Institute of America, Inc.; www.ili.ai.com.
115. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.

116. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
117. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
118. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
119. ISO - International Organization for Standardization; www.iso.org.
120. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
121. ITU - International Telecommunication Union; www.itu.int/home.
122. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
123. LMA - Laminating Materials Association; (See CPA).
124. LPI - Lightning Protection Institute; www.lightning.org.
125. MBMA - Metal Building Manufacturers Association; www.mbma.com.
126. MCA - Metal Construction Association; www.metalconstruction.org.
127. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
128. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
129. MHIA - Material Handling Industry of America; www.mhia.org.
130. MIA - Marble Institute of America; (See NSI).
131. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.
132. MPI - Master Painters Institute; www.paintinfo.com.
133. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
134. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
135. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
136. NADCA - National Air Duct Cleaners Association; www.nadca.com.
137. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
138. NALP - National Association of Landscape Professionals; www.landscapeprofessionals.org.
139. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
140. NBI - New Buildings Institute; www.newbuildings.org.
141. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
142. NCMA - National Concrete Masonry Association; www.ncma.org.
143. NEBB - National Environmental Balancing Bureau; www.nebb.org.
144. NECA - National Electrical Contractors Association; www.necanet.org.
145. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
146. NEMA - National Electrical Manufacturers Association; www.nema.org.
147. NETA - InterNational Electrical Testing Association; www.netaworld.org.
148. NFHS - National Federation of State High School Associations; www.nfhs.org.
149. NFPA - National Fire Protection Association; www.nfpa.org.
150. NFPA - NFPA International; (See NFPA).
151. NFRC - National Fenestration Rating Council; www.nfrc.org.
152. NGA - National Glass Association (The); (Formerly: Glass Association of North America); www.glass.org.
153. NHLA - National Hardwood Lumber Association; www.nhla.com.
154. NLGA - National Lumber Grades Authority; www.nlga.org.
155. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
156. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
157. NRCA - National Roofing Contractors Association; www.nrca.net.
158. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
159. NSF - NSF International; www.nsf.org.

160. NSI - National Stone Institute; (Formerly: Marble Institute of America); www.naturalstoneinstitute.org.
161. NSPE - National Society of Professional Engineers; www.nspe.org.
162. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
163. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
164. NWFA - National Wood Flooring Association; www.nwfa.org.
165. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
166. PDI - Plumbing & Drainage Institute; www.pdionline.org.
167. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
168. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
169. RFCI - Resilient Floor Covering Institute; www.rfci.com.
170. RIS - Redwood Inspection Service; www.redwoodinspection.com.
171. SAE - SAE International; www.sae.org.
172. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
173. SDI - Steel Deck Institute; www.sdi.org.
174. SDI - Steel Door Institute; www.steeldoor.org.
175. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.
176. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
177. SIA - Security Industry Association; www.siaonline.org.
178. SJI - Steel Joist Institute; www.steeljoist.org.
179. SMA - Screen Manufacturers Association; www.smainfo.org.
180. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
181. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
182. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
183. SPIB - Southern Pine Inspection Bureau; www.spib.org.
184. SPRI - Single Ply Roofing Industry; www.spri.org.
185. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
186. SSINA - Specialty Steel Industry of North America; www.ssina.com.
187. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
188. STI - Steel Tank Institute; www.steeltank.com.
189. SWI - Steel Window Institute; www.steelwindows.com.
190. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
191. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
192. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
193. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
194. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
195. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
196. TMS - The Masonry Society; www.masonrysociety.org.
197. TPI - Truss Plate Institute; www.tpinst.org.
198. TPI - Turfgrass Producers International; www.turfgrassod.org.
199. TRI - Tile Roofing Institute; www.tilerroofing.org.
200. UL - Underwriters Laboratories Inc.; www.ul.com.
201. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
202. USAV - USA Volleyball; www.usavolleyball.org.
203. USGBC - U.S. Green Building Council; www.usgbc.org.

204. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
 205. WA - Wallcoverings Association; www.wallcoverings.org.
 206. WASTEC - Waste Equipment Technology Association; www.wastec.org.
 207. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
 208. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
 209. WDMA - Window & Door Manufacturers Association; www.wdma.com.
 210. WI - Woodwork Institute; www.wicnet.org.
 211. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
 212. WWPA - Western Wood Products Association; www.wwpa.org.
- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. DIN - Deutsches Institut für Normung e.V.; www.din.de.
 2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
 3. ICC - International Code Council; www.iccsafe.org.
 4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; www.usace.army.mil.
 2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 4. DOD - Department of Defense; www.quicksearch.dla.mil.
 5. DOE - Department of Energy; www.energy.gov.
 6. EPA - Environmental Protection Agency; www.epa.gov.
 7. FAA - Federal Aviation Administration; www.faa.gov.
 8. FG - Federal Government Publications; www.gpo.gov/fdsys.
 9. GSA - General Services Administration; www.gsa.gov.
 10. HUD - Department of Housing and Urban Development; www.hud.gov.
 11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
 12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 13. SD - Department of State; www.state.gov.
 14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
 15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 18. USP - U.S. Pharmacopeial Convention; www.usp.org.
 19. USPS - United States Postal Service; www.usps.com.
- E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and

regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.govinfo.gov.
 2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
 3. DSCC - Defense Supply Center Columbus; (See FS).
 4. FED-STD - Federal Standard; (See FS).
 5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org.
 6. MILSPEC - Military Specification and Standards; (See DOD).
 7. USAB - United States Access Board; www.access-board.gov.
 8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
 2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
 3. CDHS; California Department of Health Services; (See CDPH).
 4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
 5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
 6. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
 7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservation.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
 - 2. Section 312000 "Earth Moving" for disposal of ground water at Project site.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Implementation and Termination Schedule: Within 15 calendar days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

1.4 QUALITY ASSURANCE

- A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails.
- B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities for use during construction.
- C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 - 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- F. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
 - 2. Maintain support facilities until Engineer schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
 - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

- C. Temporary Use of Planned Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
 - 1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 312000 "Earth Moving."
 - 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 - 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Section 321216 "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
 - 3. All sediment laden water shall be pumped from open excavations shall be filtered using a sediment filter bag placed on filter stone in a well vegetated area.
- G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Temporary Erosion and Sedimentation Control: Comply with PaDEP E&S & BMP Manuals for Stormwater Management, including any permit conditions provided by the DCCD E&S Permit or PaDEP General Permit and requirements specified in Section 311000 "Site Clearing."
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings.
 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.
- H. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- I. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

- J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- K. Temporary Egress: Maintain temporary egress from existing facilities on-site as required.
- L. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- M. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
 - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 - 3. Indicate methods to be used to avoid trapping water in finished work.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 - 4. Remove standing water from decks.
 - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION

SECTION 016000- PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 REFERENCE TO OTHER PROJECT MANUAL SECTIONS

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

1.2 SUMMARY

A. Section Includes:

1. General product requirements, including:
 - a. General specification requirements for all products.
 - b. Product options.
 - c. Procedures for substitution requests.
 - d. General requirements and procedures for maintenance materials and tools.
2. General requirements for product documentation, including:
 - a. Requirements and procedures for schedule of products.
 - b. General requirements for operation and maintenance data.
 - c. General requirements for warranties.
3. General procedures for products including:
 - a. Procedures for transportation and handling.
 - b. Procedures for delivery and receiving.
 - c. Procedures for storage.

1.3 DEFINITIONS

- A. Damage: Any sort of deterioration whether due to weather, normal wear and tear, accident, or abuse, resulting in soiling, marring, breakage, corrosion, rotting, or impairment of function.

1.4 SUBMITTALS

- A. Receipts for maintenance materials and tools.
- B. Refer to Division 1 - Submittals.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Components required to be supplied in quantity within a specification section shall be identical, interchangeable, and made by the same manufacturer.
- B. Do not use products removed from existing construction, unless specifically permitted by the contract documents or approved by the Owner.

2.2 MAINTENANCE MATERIALS AND TOOLS

- A. Maintenance Materials: Parts and materials for repair and maintenance; specific items required are specified in product sections.

1. Provide products and tools which are identical to those used in the work; if necessary to obtain identical items, order at the same time as products to be installed or tools to be used in the work.
- B. Package appropriately and label to show type and quantity of contents.
- C. Deliver, handle, and store in the same manner as products to be installed.
- D. Do not turn over to the Owner until date of substantial completion, unless otherwise approved by the Owner.
- E. Deliver to the Owner; unload.
- F. Obtain receipt prior to final payment.

PART 3 - EXECUTION

3.1 PRODUCT OPTIONS

- A. It is the Contractor's responsibility to select products which comply with the contract documents and which are compatible with one another, with existing work, and with products selected by other contractors.
 1. Verify that electrical characteristics of products are compatible with electrical systems; notify Engineer of all discrepancies, prior to material delivery.
 2. Where visual matching to an established physical sample is required, the Engineer's decision will be final.
- B. Do not use any substitute products which have not been approved in accordance with the requirements of the contract documents; formal substitution request is required. All substitution requests are to be made in advance of the bid date and in accordance with the provisions as set forth in the Special Conditions section of these specifications.
- C. Definition of Substitute Product: Any product which does not meet the requirements of the contract documents, whether in product characteristics, performance, quality, manufacturer, model number or brand names, is considered a substitute.
- D. Product Options: Where products are specified using more than one method, such as description with a manufacturer list, use a product meeting the requirements of both specification methods.
- E. Products Specified by Reference Standard: Use any product meeting the specification. Provisions of reference standards shall not modify the responsibilities of the Owner or Engineer as defined in the contract documents.
- F. Products Specified by Description: Use any product meeting the specification.
- G. Products Specified by Performance Requirements: Use any product meeting the specification.
- H. Products Specified to Match a Physical Sample: Use first class product that matches; obtain the Engineer's approval.
- I. Products Specified by Listing a Brand Name Product as the "Basis of Design": Provide a product equivalent to the product specified within the limits of variation specified; submit substitution request for all products other than that listed as basis of design.
- J. Products Specified by Listing Brand Name(s): Provide a product at least equal to the brand name product, or products, listed; submit substitution request for any brand name product not listed.
- K. Products Specified by Listing Manufacturer(s): Provide a product meeting the specification; submit substitution request for any manufacturer not listed.

3.2 SUBSTITUTION REQUESTS

- A. Substitution requests must be submitted prior to receipt of bids; see Special Conditions.
- B. Substitutions will not be considered between the bid date and the award of the contract.
- C. Substitutions will not be allowed after award of the contract except when, through no fault of the Contractor, of the specified product is not available.

3.3 SUBSTITUTION PROCEDURE

- A. Submission of request for substitution shall constitute a representation by the Contractor that he:
 - 1. Has investigated the proposed product and determined that it is equal to or better than the specified product. Absence of an explicit comparison of any characteristic of the proposed product to the specified product shall constitute a representation that the proposed product is equal to or better than the specified product with regard to that characteristic.
 - 2. Will provide the same warranty for the proposed product as for the specified product.
 - 3. Will coordinate the installation and make other changes which may be required for the work to be complete in all respects, including:
 - a. Redesign.
 - b. Additional components and capacity required by other work affected by the change.
 - 4. Waives all claims for additional costs and time extensions which subsequently may become apparent and which are caused by the change.
- B. Substitutions will not be considered when acceptance would require substantial revision of the contract documents.
- C. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request.
- D. Substitution requests will not be considered when submitted directly by subcontractor or supplier.
- E. Substitution Request Procedure: Submit written request with complete data substantiating compliance of the proposed product with the requirements of the Contract Documents.
 - 1. Submit request to the Engineer.
 - 2. Submit 5 copies of each request and accompanying data.
 - 3. Only one request for substitution will be considered for each product.
- F. Data Required with Substitution Request: Provide at least the following data:
 - 1. Identify product by specification section and paragraph number.
 - 2. Manufacturer's name and address, trade name and model number of product (if applicable), and name of fabricator or supplier (if applicable).
 - 3. Complete product data.
 - 4. An itemized comparison of the proposed product to the specified product.
 - 5. List of maintenance services and replacement materials available.
 - 6. Statement of the effect of the substitution on the construction schedule.
 - 7. Description of changes that will be required in other work or products if the substitute product is approved.
- G. The Engineer will determine acceptability of the proposed substitution.

- H. When the proposed substitution is not accepted, provide the product (or one of the products, as the case may be) specified.

3.4 SCHEDULE OF PRODUCTS

- A. Prepare a complete schedule of products used, including the following for each product:
 - 1. Manufacturer's name.
 - 2. Brand or trade name.
 - 3. Model number, if applicable.
 - 4. Reference standard, if more than one is applicable.
 - 5. Arrange products in the schedule by specification sections; indicate paragraph where specified.
- B. Prepare and submit a preliminary schedule within 30 days after award of contract; resubmit when revised; submit final schedule prior to final payment.
- C. Schedule of products shall not be used to obtain approval of substitute products; make separate request for substitution.

3.5 OPERATION AND MAINTENANCE DATA

- A. Provide operation and maintenance data for the types of products listed below and for all other products as specified in individual product sections.
 - 1. Provide data sufficient for operation and maintenance by Owner without further assistance from the manufacturer.
 - 2. Provide completed data at least 30 days prior to instruction of Owner personnel.
- B. Data Required For Products - General:
 - 1. Name of manufacturer and product.
 - 2. Name, address, and telephone number of subcontractor or supplier.
 - 3. Local source of replacements.
 - 4. Local source of replaceable parts and supplies.
- C. Product Data: Where product data is specified for inclusion in operation and maintenance data, provide manufacturer's data sheets marked to indicate specific product and product options actually installed; delete inapplicable data.
- D. Project Record Documents: Provide an additional copy of applicable record documents for inclusion with the operation and maintenance data.
- E. Custom Manufactured Products: Provide all information needed for reordering product and components.
- F. Finish Materials: Manufacturer's product data, color/texture designations, and manufacturer's instructions for care, cleaning, and maintenance.
- G. Products Exposed to Weather and Products for Moisture Protection: Manufacturer's product data, recommended inspection schedule and procedures, maintenance and repair procedures, and maintenance materials required.
- H. Equipment: Provide at least the following information:
 - 1. Product data giving equipment and function description, with normal operating characteristics and limiting conditions.

2. Starting, operating, and troubleshooting procedures.
 3. Cleaning and maintenance requirements and procedures.
 4. External finish maintenance requirements.
 5. List of maintenance materials required.
 6. List of special tools required.
 7. Parts list: List all replaceable parts, with ordering data.
 8. Recommended quantity of spare parts to be maintained in storage.
- I. Systems: Provide overall function description, with diagrams, prepared especially for this project.
- J. Form of Data: Prepare data in the form of an instructional manual.
1. Arrange content logically, using section numbers and sequence of sections indicated on the table of contents of this project manual.
 2. When multiple volumes are used, arrange by related subjects; identify contents in cover title.
 3. Assemble into 3-ring binders with maximum 2-inch ring size.
 - a. Hardback, cleanable plastic covers.
 - b. Identify each book with title "Operation and Maintenance Instructions" and project name.
 - c. Prepare special typewritten data on minimum 20-pound paper.
 - d. Provide tabbed divider for each product and system.
 - e. Drawings: Bind in with other data; provide reinforced binding edge; fold larger drawings to size of pages.
 1. Do not use pockets or loose drawings.
 4. Provide table of contents for each volume listing:
 - a. Name of the project.
 - b. Name, address, telephone number, and contact name of:
 1. Subcontractor or supplier.
 2. Contractor.
 3. Engineer
 - c. Index of products and systems included in volume.

3.6 WARRANTIES

- A. Provide warranties as specified in individual product sections.
- B. Manufacturer Warranties: Manufacturer's standard product warranty running for the manufacturer's standard term, unless otherwise indicated.
1. Submit copies of all manufacturer warranties which extend beyond the end of the contract correction period.
- C. Special Project Warranties: Written warranty commencing at date of substantial completion, running for the term indicated, and signed by the entities specified.
1. Where completion of warranty item is materially delayed beyond the date of substantial completion, provide warranty commencing on date of acceptance.
 2. Submit each special project warranty.
- D. Provide 4 copies of each executed warranty.
- E. Show actual date of commencement on each warranty.

3.7 TRANSPORTATION AND HANDLING

- A. Require supplier to package finished products in a manner which will protect from damage during shipping, handling, and storage.
- B. Transport products by methods which avoid damage.
- C. Deliver in dry, undamaged condition in manufacturer's unopened packaging.
- D. Provide equipment and personnel adequate to handle products by methods which prevent damage.
- E. Provide additional protection during handling where necessary to prevent damage to products and packaging.
- F. Lift large and heavy components at designated lift points only.

3.8 DELIVERY AND RECEIVING

- A. Arrange deliveries of products to allow time for inspection prior to installation.
- B. Coordinate delivery to avoid conflict with the work and to take into account both the conditions at the site and the availability of personnel, handling equipment, and storage space.
- C. Clearly mark partial deliveries to identify contents, to permit easy accumulation of entire delivery, and to facilitate assembly.
- D. Promptly inspect shipments and remedy damage, incorrect quantity, incompleteness, improper or illegible labeling, and noncompliance with requirements of contract documents and approved submittals.

3.9 STORAGE

- A. No indoor storage areas are available on site.
- B. General Storage Procedures:
 - 1. Store products immediately on delivery.
 - 2. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 - 3. Store in a manner to prevent damage to the stored products and to the work.
 - 4. Store moisture-sensitive products in weathertight enclosures.
 - 5. Store indoors if necessary to keep temperature and humidity within ranges required by manufacturer.
 - 6. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
 - 7. Arrange storage to provide access for inspection and inventory.
 - 8. Periodically inspect and remedy damage and noncompliance with required conditions.
- C. Loose Granular Materials: Store on solid surfaces in well-drained area; prevent mixing with foreign materials.
- D. Exterior Storage:
 - 1. Cover products subject to weather damage with impervious sheet covering; provide ventilation to avoid condensation.
 - 2. Provide surface drainage to prevent runoff or ponded water from damaging stored products.
 - 3. Prevent damage and contamination from refuse and chemically injurious materials and liquids.
 - 4. Store fabricated products on substantial platforms, blocking, or skids above the ground, sloped to drain.

END OF SECTION 016000p

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Installation of the Work.
 - 3. Cutting and patching.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a professional engineer to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

- J. Remove and replace damaged, defective, or non-conforming Work.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit testing, adjusting, and balancing records.
 6. Submit sustainable design submittals not previously submitted.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated file.
 - b. PDF electronic file. Architect will return annotated file.
 - c. Web-based project software upload. Utilize software feature for creating and updating list of incomplete items (punch list).

1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Architect or by uploading to web-based project software site
- D. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
- E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. 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.
 - c. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

- d. Sweep concrete floors broom clean in unoccupied spaces.
 - e. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - f. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - g. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - h. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - i. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations, before requesting inspection for determination of Substantial Completion.
- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit on digital media acceptable to Architect or by uploading to web-based project software site. Enable reviewer comments on draft submittals.
 - 2. Submit three paper copies. Architect will return two copies.
- C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 10 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.
- D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - 2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority.

9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.

3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
 1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- D. Operating Procedures: Include the following, as applicable:
 1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.

- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.
- C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.8 PRODUCT MAINTENANCE MANUALS

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

END OF SECTION 017823

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.

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

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.
 - 1. Submit video recordings by uploading to web-based Project software site.

- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
- E. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900