PROJECT MANUAL

INCLUDING BIDDING AND CONTRACT REQUIREMENTS AND SPECIFICATIONS
FOR

CONTRACT NO. 3 - PLUMBING CONSTRUCTION

FOR

MERCER COUNTY AGRICULTURAL AND CONSERVATION COMMUNITY LEARNING CENTER AT MUNNELL RUN FARM

41 MUNNELL RUN LANE
MERCER, PA 16137

FOR THE

MERCER COUNTY COMMISSIONERS

125 SOUTH DIAMOND STREET
MERCER, PA 16137

ENGINEERS HHSDR ARCHITECTS

40 SHENANGO AVENUE
SHARON, PA 16146
PHONE (724) 981-8820

201 CENTURY BUILDING, 130 7TH STREET
PITTSBURGH, PA 15222
PHONE (412) 281-2280

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MAY 29, 2026 COMMISSION NUMBER 4826

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MERCER COUNTY AGRICULTURAL AND
CONSERVATION COMMUNITY
LEARNING CENTER AT
MUNNELL RUN FARM
41 MUNNELL RUN LANE
MERCER, PA 16137

FOR THE
MERCER COUNTY COMMISSIONERS
125 SOUTH DIAMOND STREET
MERCER, PA 16137
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REFER TO DRAWING SHEET CS-1 FOR LIST OF DRAWINGS

END OF SECTION 000115

SECTION 001000 - ADVERTISEMENT

ADVERTISEMENT
MERCER COUNTY
Munnell Run Farm
Agricultural and Conservation Community Learning Center

The County of Mercer is requesting sealed written bids for the Agricultural and Conservation Community Learning Center at Munnell Run Farm, 41 Munnell Run Lane, Mercer, PA 16137.

Bids must conform with the Contract Documents as provided by the County. Bid forms, bid instructions, bid specifications, and the scope of work can be obtained on the County's website at https://www.mercercountypa.gov/rfp/

A pre-bid meeting will take place at the site at Munnell Run Farm, 41 Munnell Run Lane, Mercer, PA 16137 on Thursday, June 18 at 10:00 a.m., at which time prospective bidders may inspect the premises and questions will be answered regarding the scope of work, bidding requirements, and Contract documents.

It is the intent of the County to enter into separate contracts as follows: Contract No.1 -General Construction, Contract No. 2 - HVAC Construction, Contract No. 3 - Plumbing Construction, Contract No. 4 - Electrical Construction.

Pennsylvania Prevailing Wage Rates apply to this Project.

Note, this Project is funded in part by a grant through the ARPA CPF MPCFP, Contract #C000090918. Contractors must follow all applicable federal, state and local laws and regulations, and program guidelines specified in the Contract Documents and the Commonwealth of Pennsylvania.

Bids must be submitted in a sealed envelope, marked "Mercer County Agricultural and Conservation Community Learning Center" as well as the Name of the Bidder, Contract Name and Number and received by Mercer County Controller, Stephen J. Sherman II, at the Mercer County Courthouse, 125 S. Diamond Street, Suite 2, Mercer, PA 16137 by 1:00 p.m. on Thursday, July 2, 2026.

All bids must be accompanied by a certified check or bid bond made payable to the County of Mercer in the amount of 10% of the bid.

Any questions should be directed to HHSDR Architects/Engineers at 40 Shenango Avenue, Sharon, PA 16146, 724-981-8820.

Bids will be opened at the public Commissioners' Meeting at 3:00 p.m., on Thursday, July 2, 2026, in the Mercer County Courthouse, 125 S. Diamond Street, Mercer, PA 16137. It is anticipated that the bid will be awarded at the public Commissioners' Special Meeting scheduled for 3:00 p.m., on Thursday, July 9, 2026, in the Mercer County Courthouse.

Bids must be firm for thirty (30) days following the opening of bids on July 2, 2026. The successful bidder must enter into a contract with the County of Mercer within ten (10) days following notice of the bid award to provide the specified services.

The Mercer County Board of Commissioners reserves the right to reject any and all bids, to waive any informality in the bids, and to award the bid in the best interest of the taxpayers, to the lowest responsible bidder.

MERCER COUNTY BOARD OF COMMISSIONERS
Ann Coleman, Chair
William Finley, Jr.
Timothy M. McGonigle

END OF SECTION 001000

SECTION 002000 - INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 INVITATIONS FOR BIDS

A. Sealed bids for Mercer County Agricultural and Conservation Community Learning Center at Munnell Run Farm, 41 Munnell Run Lane, Mercer, PA 16137, for the Mercer County Board of Commissioners, will be received to the attention of Mercer County Controller, Stephen J. Sherman II, at the Mercer County Courthouse, 125 S. Diamond Street, Suite 2, Mercer, PA 16137, Attention: Mercer County Board of Commissioners, until **1:00 PM**, local time, **Thursday, July 2, 2026**.

B. A Pre-bid Conference will be held at the site on **Thursday, June 18, 2026, at 10:00 AM**. The purpose of the meeting will be to review the scope of the proposed project and clarify any items in the Contract Documents.

1.02 OPENING OF BIDS

A. Sealed bids will be publicly opened and read at a meeting in the Mercer County Board of Commissioners Assembly Room on **Thursday, July 2, 2026, at 3:00 PM** prevailing time, at the Mercer County Courthouse, Mercer, PA.

1.03 CONTRACTS

A. It is the intent of the Owner to enter into separate contracts as follows:
Contract No. 1 General Construction.
Contract No. 2 HVAC Construction.
Contract No. 3 Plumbing Construction.
Contract No. 4 Electrical Construction.

B. The Owner may enter into other separate contracts at this or later dates.

1.04 PLANS

A. Contract Documents were prepared by HHSDR Architects and Engineers, 40 Shenango Avenue, Sharon, PA, 16146 (724) 981-8820, and 201 Century Building, 130 Seventh Street, Pittsburgh, PA, 15222 (412) 281-2280.

B. Contract Documents can be obtained on Mercer County's website at https://www.mercercountypa.gov/rfp/.

C. Addenda will be posted to Mercer County's website.

D. The only electronic format Contract Documents will be available in is portable document format (pdf); Contract Documents will not be available in any of these electronic formats AutoCAD, Microsoft Word, Excel, etc.

1.05 BIDDER'S QUALIFICATIONS

A. Each Bidder shall be prepared, if so requested, to present evidence of the Bidder's experience,

qualifications and financial ability to carry out the work in accordance with the terms of the Agreement, within twenty-four (24) hours of the bid opening. Bidder's qualifications, if so requested, shall be submitted as outlined in Section 004513 - Bidder's Proof of Competency.

1.06 BID SECURITY

A. Each bid must be accompanied by a Bid Security Bond, payable to the County of Mercer in an amount of not less than **ten percent (10%)** of the bid (including Base Bid and all Add Alternate Bids).

B. Such Bid Security Bond shall be submitted with the understanding that it shall guarantee that the Bidder's Bid will not be withdrawn for a period of at least **thirty (30)** days after the scheduled closing time for receipt of bids; that if the Bid is accepted, the Bidder will execute the Form of Agreement, as provided by the Owner, with all blanks appropriately filled and will submit the required 100% Performance and Labor and Material Bonds (submitted on A.I.A. Document A312) and 100% Maintenance Bond as specified in Section 007316 Insurance Requirements; and that in the event of withdrawal of said Bid within said period, or the failure to enter into said Agreement and submit said Bonds within ten days after the Bidder has received notice of the acceptance of the Bid, the Bidder shall be liable to the above mentioned Owner for the full amount of such Bond as representing the damage to the Owner on account of the default of the Bidder in any particular hereof. The Bid Bond of all Bidders whose Bids are not accepted will be returned within ten calendar days after the scheduled bid opening date.

1. Contractor's withdrawal of Bid:
    a. A bidder may only withdraw a bid if there is an honest and good-faith mistake (which must be supported by evidence) in the calculation of the bid price. A bidder has two business days from bid opening to withdraw a bid.
    b. The Owner reserves the right to accept or decline the Contractor's Withdrawal of Bid Request and reserves the right to retain the bid bond.
    c. A bidder who withdraws a bid will not be permitted to bid on the project a second time (should it be rebid) or provide any work or materials to the project.
    d. If the Owner chooses to rebid the project, the bid bond of the withdrawing bidder will be forfeited to the Owner to supplement the rebid costs.

1.07 FAMILIARITY WITH PROPOSED WORK

A. Contracts will be awarded with the understanding that the Contractor, prior to submission of bid, has become acquainted with the requirements of the Contract Documents, including those of other Prime Contractors, condition of the site, the building (interior spaces, exterior envelope), terrain, soil conditions, all utilities in existence (including those to which connections are to be made), all other conditions of the Contract and has obtained all information necessary for completion of the work on or before the date specified and shall assume all risks resulting from any changes in the conditions which may occur during the progress of the work.

1. Site Visitation: Bidders are required to attest to the fact that they have visited the site with the submittal of their Bid Form, Section 004116.
2. Site Visitations: Contact Jay Russell, District Manager, Mercer County Conservation District, 724-662-2242 ext.2391, jrussell@mercercountypa.gov, to schedule a site visitation.

B. It is the intent of the Architect and Engineer to fully clarify all conditions of the Contract Documents. It is, therefore, highly recommended that all Bidders contact the Architect and Engineer to discuss any items in question during the bidding period so that any questionable item can be resolved, and if required, Addenda may be issued prior to submission of bids.

1. Manufacturers, suppliers, and sales representatives are not to contact the Owner during bidding

to discuss their products.

C. The Owner and Architect are relying upon the Bidders site investigation to adequately price the work for the purpose of avoiding claims that the Contract Documents provided contain insufficient information regarding existing conditions or that the Bidder incorrectly assumed the existing conditions. The Contractor shall not at any time after submission of its Bid make any claim based on insufficient information or incorrectly assumed conditions that should have been discovered by the Bidder's site investigation. Nor shall the Contractor claim any misunderstanding in regard to the nature, conditions, or character of the work to be done under the Contract.

D. Bidders are responsible for providing all equipment, and the means, necessary to investigate the existing conditions prior to submitting their Bids.

1.08 REGULATIONS

A. The law of the place of building shall govern the construction of this Contract, which is the Pennsylvania Uniform Construction Code (PA UCC). Codes and Standards enforced under the UCC: the 2021 International Codes issued by the International Code Council (ICC), including accessibility provisions in Chapter 11 and Appendix E, ANSI A117.1.

B. The general prevailing minimum wage rates, as determined by the Pennsylvania Department of Labor and Industry, Bureau of Labor Law Compliance for Prevailing Minimum Wage Predeterminations, shall be paid for each craft or classification of all workers needed to perform the Contract during the anticipated term thereof, refer to Section 007343 for the rates as issued for this Project.

C. The Contractor shall contact the local authorities regarding any requirements for Contractor licenses and/or bonding, and any ordinances which may restrict early morning, late evening, and/or weekend work hours, as well as any restrictions regarding access routes to the site.

D. The Bidder's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances and codes, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they are deemed to be included in the Contract the same as though herein written in full. Section 007216 General Conditions Article 13 provides a non-all-inclusive list of applicable laws, regulations, acts, etc.

1. Due to the fact that the Project is financed, in part, by the Commonwealth of Pennsylvania via a grant from the American Rescue Plan Act-Capital Projects Fund-Multi Purpose Community Facilities Program (ARPA CPF MPCFP), all Contractors (including all subcontractors) shall comply with all applicable Federal and State laws, regulations, and grant requirements. Excerpts from Grant ARPA CPF MPCFP Contract #C000090918 are included following this Section (Attachments C, G, and H).
2. The Contractor shall provide a temporary construction sign that reads "This Project was financed, in part, by a Grant from the American Rescue Plan Act-Capital Projects Fund-Multi Purpose Community Facilities Program. At a minimum, the financing acknowledgment sign shall be constructed of 3/4" fir plywood (A-A INT-APA Paint Grade), edged with 3/4" x 1" exterior wood trim (2'-8" H x 6'-0" W) on treated wood posts. Background shall be painted white (exterior paint). Project Sign shall also include Project Title (Mercer County Agricultural and Conservation Community Learning Center at Munnell Run Farm).
3. Contractors and all subcontractors shall not be currently under suspension or debarment by the Commonwealth of Pennsylvania, any other state, or the federal government.
    a. Bidders shall have no outstanding tax liability to the Commonwealth of Pennsylvania.

b. Bidders shall disclose any violations with Commonwealth of Pennsylvania Department of Labor and Industry wage rates.
c. Bidders shall not appear on the federal website https://www.sam.gov.

E. Pennsylvania's Public Works Employment Verification Law (Act 127 of 2012 and as amended by 2022 Act 141 Article XXIV-C): All contractors and subcontractors shall verify their employees are authorized to work in the United States through the Federal government's Employment Verification Program (EVP) and E-Verify®, an internet-based system, operated by the United States Department of Homeland Security. A copy of the Commonwealth of Pennsylvania Public Works Employment Verification Form as provided by the Pennsylvania Department of General Services is included following this Section. The Form and relevant information are available at https://www.dgs.pa.gov/Materials-Services-Procurement/Public-Works-Employment-Verification.

1. Contractor's execution of the form acknowledges that the Contractor is participating in the E-Verify Program (EVP) and is subject to the requirements of Federal Law governing the use of EVP.
2. Compliance by the Contractor shall be a precondition of Contract Award.
3. In conducting the verification required by this provision, neither Contractor nor any subcontractor may discriminate against any employee on the basis of race, ethnicity, color or national origin.
4. Contractor shall complete said Form and submit it to the Project Owner within twenty-four (24) hours of the bid opening.
    a. Each awarded Contractor's subcontractors shall also submit said form to the Project Owner prior to performing work on site, verifying their employees are authorized to work in the United States.

1.09 COMPLETION OF WORK AND LIQUIDATED DAMAGES

A. The Bidder shall submit his Bid with the understanding that (1) the Work shall be completed in accordance with Section 011000 "Scheduling Requirements of the Work", and the Final Project Completion Date(s) shall be as stated therein, (2) the time for the completion of the Work shall be considered of the essence of this Contract, and (3) for the costs of extra inspection, salaries of contingent forces and other expenses entailed by the Owner by delay in completing the contract, said Owner shall be entitled to liquidated damages in the following amounts:

Final Project Completion Date	**$500.00**
Final Project Closeout Completion Date	**$400.00**

for each and every calendar day's delay from the Final Completion Date(s) specified, not solely caused by the Owner, provided however, that the Contractor shall be entitled to one day in addition to the time stipulated for each work day's delay that may be solely caused by the Owner or conditions beyond the control of the Contractor. Weather conditions will not be considered as reason for extension of time for completion of work. It is further understood, however, that any extensions of time, regardless of cause, must be requested by letter originated by the Contractor, and the Owner must grant such extensions by letter prior to same becoming effective.

B. The Owner's receipt of an Occupancy Permit does not constitute "Completion" of the work by the Contractor. To reach "Completion", the Project must have all work complete, there shall be no missing or incomplete items or temporary items on both the building/structure and site.

1.10 PREPARATION AND PRESENTATION OF BIDS

A. Each bid must be submitted upon the enclosed Bid Forms, one Bid Form required, without duplicates. Bids must be delivered in a sealed opaque envelope on or before the time and at the place stated above. Name of the Bidder, Contract Name and Number shall appear on the face of the bid envelope.

B. Bids containing any omissions, conditions, unexplained erasures or alterations or items not called for in the Bid Form, or irregularities of any kind, may be declared nonresponsive and rejected as being incomplete.

1. Also refer to Section 004513 for additional reasons that may subject the bidder to disqualification and his bid to rejection.

C. Each bid must have the full business address of the Bidder and be signed with the usual signature of the Bidder. Bids by partnerships must furnish the names of all partners and must be signed in the partnership name by an authorized partner or representative. Bids by corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. When requested, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished.

D. In submitting bids, bidder shall record all addenda issued, giving addendum number and date.

1.11 CONTRACT FORMS

A. Contracts will be prepared by the Architect on A.I.A. standard forms and reviewed by the Owner's Solicitor.

1.12 AWARD OF CONTRACT

A. The Contract will be awarded as soon as possible to the lowest responsible Bidder provided the bid is reasonable and it is in the interest of the Owner to accept it.

B. The Owner shall have the right to accept Alternates in any order or combination and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted on the date of Contract Award.

C. The Owner reserves the right to waive any informality in bids when such waiver is in the interest of the Owner.

D. The Owner reserves the right to reject any and all bids when such rejection is in the interest of the Owner, and to reject the bid of any Bidder, who in the Owner's judgment, is not in position to perform the Contract.

E. Each Bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

1.13 DEFINITIONS

A. The Contract Documents consist of the Agreement, the Conditions of the Contract, (General, Supplemental and other Conditions), the Drawings, Project Manual and all Addenda issued, including all

modifications thereof incorporated into the Documents before their execution. These form the Contract Documents.

B. The Owner is the County of Mercer.

C. The Architect / Engineer is HHSDR, Registered Architects and Engineers, 40 Shenango Avenue, Sharon, PA, 16146, (724) 981-8820, and 201 Century Building, 130 Seventh Street, Pittsburgh, PA, 15222, (412) 281-2280.

D. The Contractor is the person, firm or corporation, together with the bonding surety, by whom this Contract has been executed for the performance and completion of the work herein described.

E. The Subcontractor is the person or entity, firm or corporation having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the Plans and Specifications of this work, but does not include one who merely furnishes material not so worked.

F. The Project is all the work to be performed under this or other Contracts involving construction and the furnishing and installing of material, equipment and utilities as required for the completion and use of the Owner.

G. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the Corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address known to the person who gives the notice.

H. The term "work" of the Contractor or Subcontractor includes labor and/or material.

END OF SECTION 002000

ATTACHMENTS FOLLOWING THIS SECTION:

Public Works Employment Verification Form

Excerpts from Grant ARPA CPF MPCFP Contract #C000090918 are included following this Section (Attachments C, G, and H)

Commonwealth of Pennsylvania

Public Works Employment Verification Form

Public Works Employment Verification Office
Department of General Services
Bureau of Procurement 6th floor, Forum Place 555 Walnut Street
Harrisburg, PA 17101-1914
717-346-8115
ra-gsgseverify.pa.gov

Instructions: Complete and return the form to the contracting Public Body prior to the award of the contract.

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

Check One:

- ☐ Contractor
- ☐ Subcontractor

Contracting Public Body _____

Contract/Project No. _____

Project Description _____

Project Location _____

Date enrolled in E-Verify _____

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 Date of Signature

INSURANCE AND TAX LIABILITY REQUIREMENTS

LIABILITY INSURANCE

The Grantee's standard liability insurance policies must protect, or be endorsed to protect, the Commonwealth from claims of bodily injury, property damage, or a combination thereof arising out of any activities performed by the Grantee or its employees or agents under this agreement, including business and non-business invitees, and their property and all other property sustaining damage as a direct or indirect result of the execution of the Project when validly present on Grantee's premises whether or not actually engaged in the Project at the time the claim inures. These policies do not include any provision limiting then existing sovereign immunity of the Commonwealth or of its agents or employees. Upon request, the Grantee shall furnish to the Authority proof of insurance as required by this paragraph.

- **Key Takeaway:** The certificate of insurance should list the commonwealth as an additional insured

WORKERS' COMPENSATION INSURANCE

The Grantee shall provide workers' compensation insurance where the same is required and shall accept full responsibility for the payment of premiums for workers' compensation and social security and any other taxes or payroll deductions required by law for its employees who are performing activities specified by this agreement.

KEY COMPLIANCE REQUIREMENTS SUMMARY

Note: All of the Grantee's subcontracts with contractors providing goods or services as part of this project must contain provisions of nondiscrimination/sexual harassment set forth in Attachment G & H and, where applicable, must contain the federal contracting provisions set forth in Attachment G & H.

ATTACHMENT C - PROGRAM SPECIFIC CONDITIONS

PA Prevailing Wage: Work completed as part of this Project is subject to Pennsylvania Prevailing Wage (not Federal Davis Bacon wages). Prevailing wage rates must be included in all bid documents, specifications, and construction contracts pertaining to the project.

ATTACHMENT G - FEDERAL CONTRACTING PROVISIONS

See Section 4 - Required Provisions in Federal Contracts → this should be included in contracts.

ATTACHMENT H - COMMONWEALTH STANDARD TERMS AND CONDITIONS

See Section 3 - Nondiscrimination/Sexual Harassment

See Section 5 - Contractor Responsibility

See Section 11 - Worker Protection and Investment

ATTACHMENT C

PROGRAM SPECIFIC CONDITIONS

1. ELIGIBLE PROJECTS

Eligible projects under this program will include construction or improvements to full-service community buildings, structures, and public spaces. Examples include, but are not limited to, schools, libraries, and community health centers that serve community needs.

2. ELIGIBLE PROJECT COSTS

a. Funds may be used for any of the following eligible costs:

- **i.** Pre-project development costs and uses, including data-gathering; feasibility studies; community engagement and public feedback processes; equity assessments and planning, and needs assessments; permitting, planning, architectural design, engineering design; and work related to environmental, historical, and cultural reviews.
- **ii.** Costs of repair, rehabilitation, construction, improvement, and acquisition of real property, equipment (e.g., devices and office equipment), and facilities.
- **iii.** Ancillary costs necessary to operationalize and put the capital assets to full use, including costs to increase broadband adoption and improve digital literacy.

b. Administrative costs of the Grantee to administer the grant are limited to 2.5 percent of the grant award.

c. Administrative costs include costs to complete the grant application, costs associated with monitoring of and reporting on the project, advertising costs, and personnel costs including salaries and fringe benefits for staff required for carrying out the project.

d. The Grantee may use funds to cover costs incurred during the period beginning March 15, 2021, for one or more eligible Projects. For pre-award costs incurred after March 15, 2021, but prior to execution of this agreement, the Grantee shall provide reasonable assurance that the costs were incurred pursuant to the negotiation of and in anticipation of the Capital Projects Fund award and are necessary for the efficient and timely performance of the Project. These costs are allowable only to the extent they would have been allowable if incurred after the date of the Capital Projects Fund award and only with the written approval of Treasury.

3. EXPENDITURE OF FUNDS

a. Ten percent of awarded funds will be reserved until a final report is submitted to the Authority.

b. All funds must be expended by December 31, 2026, which is the end of the period of performance.

4. SUBSTANTIAL COMPLETION

All projects funded through this program must reach substantial completion before December 31, 2026. Substantial completion is defined as the date for which the project can fulfill the primary operations that it was designed to perform, delivering services to end-users. At substantial completion, facility operations must be operational. Extensions may be granted beyond this timeframe to the extent that factors deemed to be outside of the grantee's control, in the Authority's sole discretion, have impacted project delivery timelines. The Authority will approve extension requests on a case-by-case basis.

5. PROJECT SUSTAINABILITY

a. The Grantee shall incorporate a viable strategy that extends beyond initial investment to demonstrate the continued enabling of work, education, and health monitoring activities at the respective facility. The Grantee shall create sustainability models or long-term plans beyond the period of performance.

b. The Grantee shall provide the Authority a detailed list of intended and observed outcomes, outputs, activities, progress indicators, means of verification, and risks and assumptions associated with the project.

6. FINAL REPORT

The Grantee shall provide a final report three months after project completion. This final report will outline the activities that took place during the project, including a description of all construction that occurred, total project costs, and a description of the use of grant funds. The report will also include a summary of how the project implemented a sustainability plan addressed and enhanced equity in the community. The final 10% of grant funds will be held until the final report has been submitted to and reviewed by the Authority with any questions or concerns having been addressed by the Grantee to the Authority's satisfaction.

7. PROJECT RECORDS

The Grantee shall maintain full and accurate records with respect to the project and shall ensure adequate control over related parties in the project. The Authority requires access to the records, as well as the ability to inspect all work, invoices, materials, and other relevant records at reasonable times and places. Upon request of the Authority, the Grantee shall furnish all data, reports, contracts, documents, and other information relevant to the project.

8. CERTIFICATION OF EXPENSES

The Grantee is required to sign a payment request form certifying that the expenses were incurred and were in accordance with the scope of work approved by the Authority. Prior to final closeout of the grant agreement, the Grantee is required to submit copies of all canceled checks verifying the expenditure of the Program proceeds. Bank statements may also be submitted if electronic payment of the expenditure occurred. Notwithstanding, the Authority reserves the right to conduct a formal project audit of any project in the Authority's sole discretion.

9. PA PREVAILING WAGE ACT

a. While the federal Davis-Bacon Act prevailing wage requirements do not apply to projects funded through this program, the Pennsylvania Prevailing Wage Act (43 P.S. § 165-1 et seq.; 34 Pa. Code § 9.101 et seq.) may apply to projects funded under this program. Prevailing Wage requirements are generally applicable to grants for construction, demolition, reconstruction, alteration, repair work, renovations, build-out and installation of machinery and equipment more than $25,000.

b. The grantee is responsible for including prevailing wage rates in all bid documents, specifications, and construction contracts pertaining to the project. The Pennsylvania Department of Labor and Industry (L&I) has final authority to make prevailing wage applicability determinations. Additional reporting requirements apply to project $5 million or more.

10. AFFORDABILITY WEBSITE

Upon written electronic notification from the Authority to Grantee, Grantee shall have 30 days to demonstrate to the Authority that the Authority's affordability website and accompanying resources can be accessed via the Grantee's public-facing website.

ATTACHMENT G

FEDERAL CONTRACTING PROVISIONS

1. CIVIL RIGHTS COMPLIANCE

a. The Grantee shall comply with the legal requirements relating to nondiscrimination and nondiscriminatory use of Federal funds. Grantee may not deny benefits or services, or otherwise discriminate on the basis of race, color, national origin (including limited English proficiency), disability, age, or sex (including sexual orientation and gender identity) in accordance with the following authorities:

i. Title VI of the Civil Rights Act of 1964, P.L. 88-352 (42 U.S.C. 2000d-1 et. seq.) and related regulations (31 CFR Part 22), which provide that no person in the United States shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Grantee receives Federal financial assistance.

ii. Section 504 of the Rehabilitation Act of 1973 (Section 504), Public Law 93-112, as amended by Public Law 93-516, 29 U.S.C. 794, which provide that no otherwise qualified individual with a disability in the United States as defined in section 7(20) [29 USCS § 705(20)], shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

iii. Age Discrimination Act of 1975, Public Law 94-135, 42 U.S.C. 6101 et seq., and the Department implementing regulations at 31 CFR part 23. no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving Federal financial assistance.

iv. Pennsylvania Human Relations Act of October 27, 1957, P.L. 744, (43 P.S. 951-963) which provides that no employee, applicant for employment, independent contractor, or any other person shall be discriminated against because of race, color, religious creed, ancestry, national origin, age, or sex.

b. The Grantee will be required to provide a narrative describing its compliance with Title VI.

2. HATCH ACT

The Grantee will comply with the provisions of the Hatch Act, P.L. 85-554 (5 U.S.C 1501 et seq.) which limits the political activity of employees.

3. CONFLICT OF INTEREST

The Grantee will establish safeguards to prohibit employees from using positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have family, business, or other ties. (2 CFR 200.112)

4. REQUIRED PROVISIONS IN FEDERAL CONTRACTS (2 CFR.327)

Not all provisions will apply to all programs and their application is dependent on the requirements of the federal program under which this agreement is executed.

a. Remedies for Breach of Contract

Contracts for more than the simplified acquisition threshold (currently $250,000.00), which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, and found at 48 CFR Subpart 2.101, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for sanctions and penalties as appropriate. (2 CFR 200 Appendix II (A))

b. Termination Provision

For all contracts in excess of $ 10,000, the Grantee must address termination for cause and for convenience, including the manner by which it will be effected and the basis for settlement. (2 CFR 200 Appendix II (B))

c. Equal Employment Opportunity

Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." (2 CFR 200 Appendix II (C))

d. Davis-Bacon Act, as Amended (40 U.S.C. 3141-3148)

When required by Federal program legislation, all prime construction contracts in excess of $ 2,000 awarded by Grantee must include a provision for compliance with the Davis- Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The Grantee must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The Grantee must report all suspected or reported violations to the Grantor and the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The Grantee must report all suspected or reported violations to the Federal Awarding Agency. (2 CFR 200 Appendix II (D))

e. Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)

Where applicable, all contracts awarded by the Grantee in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. (2 CFR 200 Appendix II (E))

f. Rights to Inventions Made Under a Contract or Agreement

If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the Federal awarding agency. (2 CFR 200 Appendix II (F))

g. Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as Amended

Contracts and subgrants of amounts in excess of $ 150,000 must contain a provision that requires compliance with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency. (2 CFR 200 Appendix II (G))

h. Debarment And Suspension (Executive Orders 12549 And 12689)

A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. (2 CFR 200 Appendix II (H))

i. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)

Contractors that apply or bid for an award exceeding $ 100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. The disclosures are forwarded from tier to tier up to the

non-Federal award. (2 CFR 200 Appendix II (I))

j. Procurement of Recovered Materials

If the Grantee is an agency of a political subdivision of the Commonwealth of Pennsylvania, the Grantee and its subcontractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency ("EPA") at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines. (2 CFR 200 Appendix II (J)) and (2 CFR 200.323).

k. Prohibition on Certain Telecommunications and Video Surveillance Services of Equipment

Grantee and its subcontractors are prohibited from obligating or expending grant funds for equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The definition of "covered telecommunication equipment" is telecommunication equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of those entities). More detailed information is available at 2 CFR 200.216. (2 CFR 200 Appendix II (K)) and (2 CFR 200.216)

l. Domestic Preferences for Procurements

As appropriate and to the extent consistent with law, the Grantee should, to the greatest extent practicable under this agreement, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section: (1) "Produced in the United States'' means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products: means items and construction materials composed in whole or in part of nonferrous metals such as aluminum; plastics and polymer- based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber. (2 CFR 200.322)(2 CFR 200 Appendix II (L)) and (2 CFR 200.322).

ATTACHMENT H

Commonwealth Standard Terms and Conditions
Grant Version
(Revised - 10/1/2023)

1. DEFINITIONS

Capitalized terms used in these Commonwealth standard terms and conditions that are not otherwise defined in these provisions have the meanings specified in the agreement to which they are attached.

2. INDEMNIFICATION

The Grantee shall indemnify and defend the Commonwealth against all third-party claims, suits, demands, losses, damages, costs, and expenses, including without limitation, litigation expenses, attorneys' fees, and liabilities, arising out of or in connection with any activities performed by the Grantee or its employees and agents pursuant to this agreement, as determined by the Commonwealth in its sole discretion.

3. NONDISCRIMINATION/SEXUAL HARASSMENT

a. Representations. The Grantee represents that it is presently in compliance with and will remain in compliance with all applicable federal, state, and local laws, regulations, and policies relating to nondiscrimination and sexual harassment for the term of the agreement. The Grantee shall, upon request and within the time periods requested by the Commonwealth, furnish all necessary employment documents and records, including EEO-1 reports, and permit access to its books, records, and accounts by the Commonwealth for the purpose of ascertaining compliance with provisions of this Nondiscrimination/Sexual Harassment Clause.

b. Nondiscrimination/Sexual Harassment Obligations. The Grantee shall not:

i. in any manner discriminate in the hiring of any employee(s) for the performance of the activities required under this agreement or any subgrant agreement, contract, or subcontract, by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the Pennsylvania Human Relations Act ("PHRA") and applicable federal laws, against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.

ii. in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, against or intimidate any of its employees.

iii. in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, in the provision of services under this agreement or any subgrant agreement, contract, or subcontract.

iv. in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of PHRA and applicable federal laws, against any subgrantee, contractor, subcontractor, or supplier who is qualified to perform the work to which this agreement relates.

v. in any manner discriminate against employees by reason of participation in or decision to refrain from participating in labor activities protected under the Public Employee Relations Act, Pennsylvania Labor Relations Act, or National Labor Relations Act, as applicable, and to the extent determined by entities charged with the Acts' enforcement and shall comply with any

provision of law establishing organizations as employees' exclusive representatives.

c. **Establishment of Grantee Policy.** The Grantee shall establish and maintain a written nondiscrimination and sexual harassment policy that complies with the applicable law and these Nondiscrimination/Sexual Harassment provisions and shall inform its employees in writing of the policy. The policy must contain a provision that states that sexual harassment will not be tolerated and employees who practice it will be disciplined. For the entire period of this agreement, the Grantee shall: (1) post its written nondiscrimination and sexual harassment policy or these Nondiscrimination/Sexual Harassment provisions conspicuously in easily accessible and well- lighted places customarily frequented by employees at or near where the grant activities are performed; or (2) provide electronic notice of the policy or this clause to its employees not less than annually.

d. **Notification of Violations.** The Grantee's obligations pursuant to these provisions are ongoing from the effective date and through the termination date of the agreement. Accordingly, the Grantee shall notify the Commonwealth if, at any time during the term of this agreement, it becomes aware of any actions or occurrences that would result in violation of these provisions.

e. **Cancellation or Termination of Agreement.** The Commonwealth may cancel or terminate this agreement and all money due or to become due under this agreement may be forfeited for a violation of the terms and conditions of these Nondiscrimination/Sexual Harassment provisions. In addition, the granting agency may proceed with debarment or suspension and may place the Grantee in the Contractor Responsibility File.

f. **Subgrant Agreements, Contracts, and Subcontracts**. The Grantee shall include these Nondiscrimination/Sexual Harassment provisions in its subgrant agreements, contracts, and subcontracts with all subgrantees, contractors, and subcontractors providing goods or services under this agreement. The incorporation of these provisions in the Grantor's subgrants, contracts, or subcontracts does not create privity of contract between the Commonwealth and any subgrantee, contractor, or subcontractor, and no third-party beneficiaries are created by those provisions. If the Grantee becomes aware of a subgrantee's, contractor's, or subcontractor's violation of these provisions, the Grantee shall use its best efforts to ensure the subgrantee's, contractor's, or subcontractor's compliance with these provisions.

4. GRANTEE INTEGRITY

a. **Definitions.** For purposes of these Grantee Integrity Provisions, the following definitions apply:

i. "Affiliate" means two or more entities where (a) a parent entity owns more than 50% of the voting stock of each of the entities; (b) a common shareholder or group of shareholders owns more than 50% of the voting stock of each of the entities; or (c) the entities have a common proprietor or general partner.

ii. "Grantee" means the individual or entity, that has entered into this agreement with the Commonwealth.

iii. "Grantee Related Parties" means any Affiliates of the Grantee and the Grantee's executive officers, Pennsylvania officers and directors, or owners of five percent or more interest in the Grantee.

iv. "Financial Interest" means ownership of more than a five percent interest in any business or holding a position as an officer, director, trustee, partner, employee, or holding any position of management.

v. "Gratuity" means tendering, giving, or providing anything of more than nominal monetary value including, but not limited to, cash, travel, entertainment, gifts, meals, lodging, loans, subscriptions, advances, deposits of money, services, employment, or contracts of any kind. The exceptions set forth in the Governor's Code of Conduct, Executive Order 1980- 18, as may be amended, 4 Pa. Code §7.153(b), apply.

vi. "Non-Solicitation Award Process" means a method of awarding grants based on predetermined criteria, without the solicitation of grant applications.

b. Representations and Warranties.

i. **Grantee Representation and Warranties.** The Grantee represents, to the best of its knowledge and belief, and warrants that within the last five years neither the Grantee nor Grantee Related Parties have:

1. been indicted or convicted of a crime involving moral turpitude or business honesty or integrity in any jurisdiction;

2. been suspended, debarred, or otherwise disqualified from entering into any contract with any governmental agency;

3. had any business license or professional license suspended or revoked;

4. had any sanction or finding of fact imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust; and

5. been, and are not currently, the subject of a criminal investigation by any federal, state, or local prosecuting or investigative agency or civil anti-trust investigation by any federal, state, or local prosecuting or investigative agency.

ii. **Grantee Explanation**. If the Grantee cannot make the representations and warranties set forth above at the time of its submission of its grant application or if the agreement is awarded pursuant to a Non-Solicitation Award Process at the time of the execution of the agreement, the Grantee shall submit a written explanation outlining the reasons why it cannot make those representations and warranties. The Commonwealth may, based on its evaluation of the explanation provided, determine whether it is in the Commonwealth's best interest to execute the agreement.

iii. **Further Representations**. By submitting any bills, invoices, or requests for payment pursuant to the agreement, the Grantee further represents that it has not violated any of these Grantee Integrity Provisions during the term of the agreement.

iv. **Notice.** The Grantee shall immediately notify the Commonwealth, in writing, if at any time during the term of the agreement it becomes aware of any event that would cause the Grantee's certification or explanation to change. The Commonwealth may, in its sole discretion, terminate the agreement for cause if it learns that any of the certifications made in these Grantee Integrity Provisions are currently false or misleading due to intervening factual circumstances or were false or misleading or should have been known to be false or misleading when entering into the agreement.

c. **Grantee Responsibilities.** During the term of this agreement, the Grantee shall:

i. maintain the highest standards of honesty and integrity.

ii. take no action in violation of any applicable laws, regulations, or other requirements applicable to the Grantee that govern Commonwealth contracting or grant administration.

iii. establish and implement a written business integrity policy that includes, at a minimum, the requirements of these Grantee Integrity Provisions as they relate to the Grantee's activity with the Commonwealth and Commonwealth employees and ensure that its employees comply with the policy.

iv. not accept, agree to give, offer, confer, agree to confer, or promise to confer, directly or indirectly, any gratuity or pecuniary benefit to any person, or to influence or attempt to influence any person in violation of any federal or state law, regulation, executive order, statement of policy, management directive, or bulletin applicable to the award of grants or the administration of this agreement.

v. not have a financial interest in any other subgrantee, contractor, subcontractor, or supplier providing services, labor, or material under this agreement, unless the financial interest is disclosed to the Commonwealth in writing and the Commonwealth consents to Grantee's financial interest. The Grantee must disclose the financial interest to the Commonwealth at the time of submission of its grant application, or if a Non-Solicitation Award Process is used, no later than the date the Grantee signs the agreement. The Commonwealth shall be deemed to have consented if the required disclosure is received and all of the required Commonwealth signatures are affixed.

vi. comply with the requirements of the Lobbying Disclosure Act (65 Pa.C.S. § 13A01 et seq.) regardless of the method of award.

vii. comply with the requirements of Section 1641 of the Pennsylvania Election Code (25 P.S.§ 3260a) if this agreement was awarded pursuant to a Non-Solicitation Award Process.

viii. immediately notify the Commonwealth or the Office of the State Inspector General, in writing, when the Grantee has reason to believe that any breach of ethical standards as set forth in law, the Governor's Code of Conduct, or these Grantee Integrity Provisions has occurred or may occur, including, but not limited to, contact by a Commonwealth officer or employee, which, if acted upon, would violate the ethical standards.

d. **Investigations.** If a State Inspector General investigation is initiated, the Grantee shall reimburse the Commonwealth for the reasonable costs of investigation incurred by the Office of the State Inspector General for investigations of the Grantee's compliance with the terms of this or any other agreement between the Grantee and the Commonwealth that results in the suspension or debarment of the Grantee. The Grantee shall not be responsible for investigative costs for investigations that do not result in the Grantee's suspension or debarment.

i. cooperate with the Office of the State Inspector General in its investigation of any alleged Commonwealth agency or employee breach of ethical standards and any alleged Grantee non-compliance with these Grantee Integrity Provisions and make identified Grantee employees and volunteers available for interviews at reasonable times and places.

ii. upon the inquiry or request of an Inspector General, provide, or if appropriate, make promptly available for inspection or copying, any information of any type or form deemed relevant by the Office of the State Inspector General to Grantee's integrity and compliance with these

provisions. This information may include, but is not limited to, the Grantee's business or financial records, documents or files of any type or form that refer to or concern this agreement.

e. **Termination.** For violation of any of these Grantee Integrity Provisions, the Commonwealth may terminate this agreement and any other contract with the Grantee, claim liquidated damages in an amount equal to the value of anything received in breach of these Grantee Integrity provisions, claim damages for all additional costs and expenses incurred in obtaining another grantee to complete performance under this agreement, and debar and suspend the Grantee from doing business with the Commonwealth. These rights and remedies are cumulative, and the use or non- use of any one does not preclude the use of all or any other. These rights and remedies are in addition to those the Commonwealth may have under law, statute, regulation, or otherwise.

f. **Subcontracts.** The Grantee shall include these Grantee Integrity Provisions in its subgrant agreements, contracts, and subcontracts with all subgrantees, contractors, and subcontractors providing goods or services under this agreement. The incorporation of this provision in the Grantee's subgrant agreements, contracts, and subcontracts shall not create privity of contract between the Commonwealth and any subgrantee, contractor, or subcontractor, and no third-party beneficiaries are created by the inclusion of these provisions. If the Grantee becomes aware of a subgrantee's, contractor's, or subcontractor's violation of these provision, the Grantee shall use its best efforts to ensure their compliance with these provisions.

5. CONTRACTOR RESPONSIBILITY

a. **Definition**. For the purpose of these provisions, the term "Contractor" means as any person, including, but not limited to, a bidder, offeror, loan recipient, grantee or lessor, who has furnished or performed or seeks to furnish or perform, goods, supplies, services, leased space, construction or other activity, under a contract, grant, lease, purchase order or reimbursement agreement with the Commonwealth. The term also includes a permittee, licensee, or any agency, political subdivision, instrumentality, public authority, or other public entity in the Commonwealth.

b. **Contractor Representations.**

i. The Contractor represents for itself and its subgrantees, contractors, and subcontractors required to be disclosed or approved by the Commonwealth, that as of the date of its execution of this agreement, that neither the Contractor, nor any of its subgrantees, contractors, and subcontractors, are under suspension or debarment by the Commonwealth or any governmental entity, instrumentality, or authority and, if the Contractor cannot make this representation, the Contractor shall submit, along with the agreement, a written explanation of why the certification cannot be made.

ii. The Contractor represents that, as of the date of its execution of this agreement, it has no tax liabilities or other Commonwealth obligations, or has filed a timely administrative or judicial appeal, if any liabilities or obligations exist, or is subject to a duly approved deferred payment plan if any liabilities exist.

c. **Notification.** The Contractor shall notify the Commonwealth if, at any time during the term of the agreement, it becomes delinquent in the payment of taxes, or other Commonwealth obligations, or if it or, to the best of its knowledge, any of its subgrantees, contractors, or subcontractors are suspended or debarred by the Commonwealth, the federal government, or any other state or governmental entity. The Contractor shall provide this notification within 15 days of the date of suspension or debarment.

d. **Default.** The Contractor's failure to notify the Commonwealth of its suspension or debarment by the Commonwealth, any other state, or the federal government constitutes an event of default of the agreement with the Commonwealth.

e. **Reimbursement.** The Contractor shall reimburse the Commonwealth for the reasonable costs of investigation incurred by the Office of State Inspector General for investigations of the Contractor's compliance with the terms of this agreement or any other agreement between the Contractor and the Commonwealth that results in the suspension or debarment of the Contractor. These costs include, but are not limited to, salaries of investigators, including overtime; travel and lodging expenses; and expert witness and documentary fees. The Contractor shall not be responsible for investigative costs for investigations that do not result in the Contractor's suspension or debarment.

f. **Suspension and Debarment List.** The Contractor may obtain a current list of suspended and debarred Commonwealth contractors by visiting the eMarketplace website at http://www.emarketplace.state.pa.us and clicking the Debarment list tab.

6. AMERICANS WITH DISABILITIES ACT

a. **No Exclusion.** Pursuant to the Americans with Disabilities Act, 42 U.S. Code § 12101, et seq., no qualified individual with a disability may, on the basis of the disability, be excluded from participation in this agreement or from activities provided for under this agreement.

b. **Compliance.** For all goods and services provided pursuant to this agreement, the Grantee shall comply with Title II of the Americans with Disabilities Act, the "General Prohibitions Against Discrimination" set forth in 28 C. F. R. § 35.130, and all other regulations promulgated under Title II of the Americans with Disabilities Act that apply to state and local governments.

c. **Indemnification.** The Grantee shall indemnify the Commonwealth against all third-party claims, suits, demands, losses, damages, costs, and expenses, including without limitation, litigation expenses, attorneys' fees, and liabilities, arising out of or in connection with the Grantee's failure or its employee's or agent's failure to comply with the provisions of paragraph a, as determined by the Commonwealth in its sole discretion.

7. APPLICABLE LAW AND FORUM

This agreement is governed by and must be interpreted and enforced in accordance with the laws of the Commonwealth of Pennsylvania (without regard to any conflict of laws provisions) and the decisions of the Pennsylvania courts. The Grantee consents to the jurisdiction of any court of the Commonwealth of Pennsylvania and any federal courts in Pennsylvania and waives any claim or defense that such forum is not convenient or proper. Any Pennsylvania court or tribunal has in personam jurisdiction over the Grantee, and the Grantee consents to service of process in any manner authorized by Pennsylvania law. This provision may not be interpreted as a waiver or limitation of the Commonwealth's rights or defenses.

8. RIGHT TO KNOW LAW

a. **Applicability**. The Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-3104, ("RTKL") applies to this agreement.

b. **Grantee Assistance.** If the Commonwealth needs the Grantee's assistance in any matter arising out of the RTKL related to this agreement, the Commonwealth shall notify the Grantee that it requires the Grantee's assistance, and the Grantee shall provide to the Commonwealth:

i. access to, and copies of, any document or information in the Grantee's possession (Requested Information) arising out of this agreement that the Commonwealth reasonably believes is a

public record under the RTKL, within ten calendar days after receipt of written notification; and

ii. any other assistance as the Commonwealth may reasonably request, in order to comply with the RTKL with respect to this agreement.

c. **Trade Secret or Confidential Proprietary Information.**

If the Grantee considers the Requested Information to include a Trade Secret or Confidential Proprietary Information, as those terms are defined by the RTKL, or other information that the Grantee considers exempt from production under the RTKL, the Grantee shall notify the Commonwealth and provide, within seven calendar days of receipt of the written notice a written statement, signed by a representative of the Grantee, that explains why the requested material is exempt from public disclosure under the RTKL. If the Commonwealth determines that the Requested Information is clearly not exempt from disclosure, the Grantee shall provide the Requested Information to the Commonwealth within five business days of receipt of written notice of the Commonwealth's determination.

d. **Reimbursement**

i. **Commonwealth Reimbursement.** If the Grantee fails to provide the Requested Information and the Commonwealth is ordered to produce the Requested Information, the Grantee shall reimburse the Commonwealth for any damages, penalties, or costs that the Commonwealth may incur as a result of the Grantee's failure, including any statutory damages assessed against the Commonwealth.

ii. **Grantor Reimbursement**. The Commonwealth will reimburse the Grantee for any costs that the Grantee incurs as a direct result of complying with these provisions only to the extent allowed under the fee schedule established by the Office of Open Records or as otherwise provided by the RTKL.

e. **Challenges of Commonwealth Release.** The Grantee may file a legal challenge to any Commonwealth decision to release a record to the public with the Office of Open Records, or in the Pennsylvania Courts, however, the Grantee shall reimburse the Commonwealth for any legal expenses incurred by the Commonwealth as a result of the challenge, including any damages, penalties or costs that the Commonwealth may incur as a result of the Grantee's legal challenge, regardless of the outcome.

f. **Waiver.** As between the parties, the Grantee waives all rights or remedies that may be available to it as a result of the Commonwealth's disclosure of Requested Information pursuant to the RTKL.

g. **Survival.** The Grantee's obligations contained in this Section survive the termination or expiration of this agreement.

9. **OFFSET**

The Commonwealth may set off the amount of any state tax liability or other obligation of the Grantee, or its subsidiaries, owed to the Commonwealth against any payments due the Grantee under any contract between the Commonwealth and Grantee.

10. AUTOMATED CLEARING HOUSE (ACH) PAYMENTS

a. **Payment Method.** The Commonwealth shall make payments to the Grantee through the Automated Clearing House (ACH). Within 10 days of the grant award, the Grantee must submit or must have submitted its ACH information within its user profile in the Commonwealth's Master Database. The Grantee may enroll to receive remittance information via electronic addenda and email (e- Remittance). ACH and e-Remittance information is available at the following:

https://www.budget.pa.gov/Services/ForVendors/Pages/Direct-Deposit-and-e-Remittance.aspx

b. **Unique Identifier.** The Grantee must submit a unique invoice number with each invoice submitted. The Commonwealth shall list the Grantee's unique invoice number on its ACH remittance advice to enable the Grantee to properly apply the state agency's payment to the respective invoice or program.

c. **ACH Information in the Commonwealth's Master Database.** The Grantee shall ensure that the ACH information contained in Commonwealth's Master Database is accurate and complete. The Grantee's failure to maintain accurate and complete information may result in delays in payments.

11. WORKER PROTECTION AND INVESTMENT

The Grantee shall comply with all applicable Pennsylvania state labor laws and worker safety laws including, but not limited to, the following:

a. Construction Workplace Misclassification Act;
b. Employment of Minors Child Labor Act;
c. Minimum Wage Act;
d. Prevailing Wage Act;
e. Equal Pay Law;
f. Employer to Pay Employment Medical Examination Fee Act;
g. Seasonal Farm Labor Act;
h. Wage Payment and Collection Law;
i. Industrial Homework Law;
j. Construction Industry Employee Verification Act;
k. Act 102: Prohibition on Excessive Overtime in Healthcare;
l. Apprenticeship and Training Act; and
m. Inspection of Employment Records Law.

SECTION 004116.3 - BID FORM

BID FORM

FOR

CONTRACT NO. 3 - PLUMBING CONSTRUCTION

MERCER COUNTY AGRICULTURAL AND CONSERVATION COMMUNITY LEARNING CENTER AT MUNNELL RUN FARM 41 MUNNELL RUN LANE MERCER, PA 16137

FOR THE

MERCER COUNTY COMMISSIONERS 125 SOUTH DIAMOND STREET MERCER, PA 16137

PROPOSAL OF _____

Bidder's Name

_____

Bidder's Address

Bidder's Federal Tax I.D. Number _____

Mercer County Board of Commissioners
103 Courthouse
Mercer, PA 16137

Sirs:

In conformity with the Contract Documents as prepared by HHSDR Architects / Engineers, 40 Shenango Avenue, Sharon, PA, 16146, and 201 Century Building, 130 Seventh Street, Pittsburgh, PA, 15222, and after an examination of the site of the work, and the Contract Documents including Instructions to Bidders, this form of Proposal and Conditions of Contract, the undersigned submits this proposal and encloses herewith as a proposal guaranty, a bid bond in an amount of not less than **ten percent (10%)** of the total of the hereinafter stated bid (including Base Bid and all Add Alternate Bids) made payable to or indemnifying the County of Mercer (the Owner), which it is understood will be forfeited to and retained by the Owner as liquidated damages, if this proposal or any part thereof is accepted by the Owner and the undersigned shall fail to furnish approved bonds and execute the contract within ten (10) days from the date of issuance of the award. Should the Owner fail to make an award of this project through no fault or failure on the

part of the bidder, the Owner shall return said proposal guaranty.

It is hereby certified that the undersigned is the only person(s) interested in this proposal as principal, and that the proposal is made without collusion with any person, firm or corporation as attested to on the attached executed Non-collusive Affidavit. Bidder hereby agrees to execute the contract and furnish insurance and surety company bonds, as specified, within ten (10) days after mailing by the Owner of notice of award, and to begin work immediately after approval of said bonds and insurance.

Bidder guarantees that, if awarded the contract, the Contractor will furnish and deliver all materials, water, tools, equipment, light, heat, power, tests, transportation, secure all permits and licenses, do and perform all labor, superintendence and all means of construction, pay all fees and do all incidental work, and to execute, construct, and finish in an expeditious, substantial and workmanlike manner, in accordance with the drawings and specifications to the complete satisfaction and acceptance of the Owner for the price hereinafter stated.

For the: Mercer County Agricultural and Conservation Community Learning Center at Munnell Run Farm

It is understood that the Owner reserves the right to reject any or all proposals, or parts thereof or items therein, and to waive technicalities required for the best interests of said Owner. It is further understood that competency and responsibility of bidders will receive consideration before the award of the Contract.

Bidder submits this proposal with the understanding that the General Contractor is designated the Lead Contractor and is responsible for the daily scheduling of work within the broad framework of the Scheduling Requirements of the Work as stated in Section 011000. The Contractor submitting this Proposal has carefully reviewed the Scheduling Requirements of the Work and finds them to be reasonable and achievable. Contractor submitting this Proposal confirms that all equipment and material to be incorporated into the work will be available and accessible to install within the specified completion date(s). This Proposal is submitted with that understanding and is acknowledged by Signature below:

_____ _____

(Name) (Position)

Bidder submits this proposal with the understanding that the work shall be completed in accordance with above stated scheduling requirements and the Final Project Completion Date(s) shall be as stated therein and the time for the completion of the work shall be considered of the essence of this Contract, and that for the costs of extra inspection, salaries of contingent forces and other expenses entailed by the Owner by delay in completing the contract, said Owner shall be entitled to the liquidated damage fixed sums (as specified in Section 002000) for each and every calendar day's delay from the Final Project Completion Date(s) not solely caused by the Owner provided, however, that the Contractor shall be entitled to one day in addition to the time stipulated for each day's delay that may be solely caused by the Owner or conditions beyond the control of the Contractor. It is further understood, however, that any extensions of time, regardless of cause, beyond the above date, must be requested by letter originated by the Contractor and the Owner must grant such extension by letter prior to same becoming effective.

Contractor submitting this Proposal acknowledges that a representative of his company has visited the site during the bidding to become acquainted with the condition of the site, terrain, soil conditions, existing building (interior spaces, exterior envelope), utilities in existence, etc., as specified in Section 002000 “Instructions to Bidders”, Paragraph 1.07.A, and represents said acknowledgement by Signature below:

_____ _____

(Name) (Position)

Contractor submitting this Proposal acknowledges that he has reviewed the hereinafter "Additional Materials/Work" to be included with the Base Bid and has included the items listed in the Base Bid Total. Contractor further acknowledges that the value of all "Additional Materials/Work" items not utilized on the Project shall be deducted from the contract total at the conclusion of the project, and acknowledges same by Signature below:

_____ _____

(Name) (Position)

A Detailed Cost Breakdown sheet of the work and the contract price of the work involved will be submitted to the Architects and Engineers within the time frame specified in Section 011000.

Within 24 hours of the bid opening (if so requested), the apparent low bidder shall present evidence of the Bidder's experience, qualifications and financial ability to carry out the work in accordance with the terms of the Agreement. Bidder's qualifications shall be submitted as outlined in Section 004513 - Bidder's Proof of Competency.

Within 24 hours of the bid opening, the apparent low bidder shall submit a fully executed Public Works Employment Verification Form, as specified in Section 002000, Paragraph 1.08.E.

The Bidder agrees that he will not assign his bid or any of his rights or interests thereunder without the written consent of the Owner.

The Bid as called for is submitted in the space provided below:

BASE BID

For all Plumbing Construction Work, complete, as specified and/or shown on Contract Documents, the sum of ___

_____

_____ Dollars ($ _____).

Additional Materials/Work Note: The Base Bid shall include the amounts for the furnishing and installation of additional materials/work within the Contract time, to that shown on drawings, as stated in the following. The cost for additional items as hereafter listed shall be included in the Base Bid sum. The Owner may or may not elect to have this work performed. No material and/or labor shall be supplied until specifically requested by the Owner and/or Architect. Work described below that is not performed will be deducted from the Project total at the end of the Project. In addition to including the cost of additional items as hereafter listed in the Base Bid sum, the Contractor shall also indicate a unit price for the stated work as a basis for adjustment of the Contract amount for addition to or deletion from the additional items included in the Base Bid sum. The additional materials/work and corresponding unit prices shall include all costs, including supervision, overhead, profit, and time.

The Owner's election to have any of the following work performed, does not constitute an extension of time to the Contract.

Item	Description
1)	Furnish and install 50 linear feet of insulated 1" domestic cold water piping with fittings, beyond the extent shown on drawings. Pipe per Section 221116; insulation per Section 220700; hangers per Section 220529.
2)	Furnish and install 50 linear feet of 2" below ground natural gas piping with fittings (per Section 221124), beyond the extent shown on drawings. Excavation and backfill as specified in Section 220500.
3)	Furnish and install 50 linear feet of 2" above ground natural gas piping with fittings (per Section 221124), beyond the extent shown on drawings. Hangers per Section 220529.

4) Furnish and install 50 linear feet of 4" below ground sanitary piping with fittings (per Section 221316), beyond the extent shown on drawings. Excavation and backfill as specified in Section 220500.
5) Furnish and install four (4) 4" FD-1 floor drains (per Section 221316), beyond the extent shown on drawings. Each to be complete with fifteen (15) feet of 4" underground sanitary piping.

Note: Additional amounts of work as specified above shall be due to existing unsatisfactory conditions as verified and quantified by the Architect and Owner and will not include any area damaged by the Contractor. Any areas damaged by the Contractor's activities shall be repaired by the Contractor at no cost to the Owner.

UNIT PRICES

Unit prices as hereafter listed shall be used as a basis for adjustment of the Contract amount for addition to or deletion from the amount of work on the project. Unit prices stated on this Contract Proposal Form by the Contractor shall be added to or deducted from the Contract Sum only if directed to do so by the Owner or the Architect. Any work described as a unit price item for additional work shall not be considered as part of the Contract unless so indicated by Change Order during the performance of the work. The Owner reserves the right to perform, or otherwise have performed, the work described as unit price work in the Contract Documents.

Unit prices shall include costs of all associated testing as specified for work as listed, all bonds, insurances, overhead, profit and supervision, as well as, shipping and handling and mobilization and/or de-mobilization, and Contract time, as specified in the General Conditions (Section 007216) Article 7, Paragraph 7.3.3.2

UNIT PRICE FOR ITEM 1 – 1" DOMESTIC COLD WATER PIPE

For the adjustment of the amount of linear footage of 1" domestic cold water piping, as described above, ADD TO or DEDUCT FROM the Contract Price the sum of _____
_____Dollars ($_____) per linear foot.

UNIT PRICE FOR ITEM 2 – 2" BELOW GROUND NATURAL GAS PIPE

For the adjustment of the amount of linear footage of 2" below ground natural gas piping, as described above, ADD TO or DEDUCT FROM the Contract Price the sum of _____
_____Dollars ($_____) per linear foot.

UNIT PRICE FOR ITEM 3 – 2" ABOVE GROUND NATURAL GAS PIPE

For the adjustment of the amount of linear footage of 2" above ground natural gas piping, as described above, ADD TO or DEDUCT FROM the Contract Price the sum of _____
_____Dollars ($_____) per linear foot.

UNIT PRICE FOR ITEM 4 – 4" BELOW GROUND SANITARY PIPE

For the adjustment of the amount of linear footage of 4" below ground sanitary piping, as described above, ADD TO or DEDUCT FROM the Contract Price the sum of _____
_____Dollars ($_____) per linear foot.

UNIT PRICE FOR ITEM 5 – 4" FD-1 FLOOR DRAIN

For the adjustment of the amount of units of 4" FD-1 floor drains, as described above, ADD TO or DEDUCT FROM the Contract Price the sum of _____
_____Dollars ($_____) per unit.

ADDENDA

In submitting this proposal, I acknowledge receipt of the following Addenda, and the cost, if any, of such revisions has been included in the bid sum:

Addendum No.	Dated	Addendum No.	Dated	Addendum No.	Dated

SIGNATURES

When the bidder is an individual:

Witness Name

Witness Address

Contractor's Name (Type/Print and Signature) (SEAL)

Contractor's Address

Phone E-mail

When the bidder is a partnership:

Witness Name

Witness Address

Principal's Name (Type/Print and Signature) (SEAL)

Principal's Address

Phone E-mail

Principal's Name (Type/Print and Signature) (SEAL)

Principal's Address

Phone E-mail

Principal's Name (Type/Print and Signature) (SEAL)

Principal's Address

Phone E-mail

When the bidder is a corporation:

Corporate Name

Corporate Address

Phone E-mail

Attest:

Secretary's Name

Secretary's Address

President's Name (Type/Print and Signature)

President's Address

(CORPORATE SEAL)

The _____ is a corporation organized and existing under the laws of _____and has (has not) been granted a certificate of authority to do business in Pennsylvania, as required by the Business Corporation Law, approved May 5, 1933, P. L. 364, as amended.

Non-Collusion Affidavit

1. The Non-Collusion Affidavit is material to any contract awarded pursuant to this bid. According to the Pennsylvania Antibid-Rigging Act, 73 P.S. 1611 et seq., governmental agencies shall require Non-Collusive Affidavits to be submitted 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 this 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 unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assuring himself/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 of 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 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 will result in disqualification of the bid.

NON-COLLUSION AFFIDAVIT

Contract Name _____ Contract No. _____
State of _____ County of _____
I state that I am _____ of _____
(Title) (Name of Firm)
and that I am authorized to make this affidavit on behalf of this firm, and its owners, directors, and officers. I am the person responsible in this firm for the prices and the amount of this bid. I state that:

(1) The prices and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other bidder or potential bidder.
(2) Neither the prices nor the amount of this bid, and neither the approximate prices nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be discussed before bid opening.
(3) 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 a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
(4) The bid of this 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.
(5) _____ (Name of this firm), its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any government agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect with bidding on any public contract, except as follows: I state that _____ (Name of firm) understands and acknowledges that the above representations are material and important and will be relied on by the County of Mercer in awarding the contract for which this bid is submitted. I understand and this firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the County of Mercer of the true facts relating to the submission of bids for this contract.

_____ _____
(Name) (Position)

_____

(Company name and address)

_____

Sworn to and subscribed before me this _____ day of _____ 2026

_____ My Commission expires _____
(Notary Public)

(Notary Seal)

END OF BID FORM SECTION 004116.3

SECTION 004513 - BIDDER'S PROOF OF COMPETENCY

1.01 COMPETENCY CRITERIA

A. In determining the lowest responsible bidder, the Owner will consider the bidder's integrity, efficiency, experience, promptness, financial responsibility, and ability to successfully and timely complete the project. The Owner will scrutinize the low bidder's information for full disclosure before a bid is awarded.

1.02 BIDDER'S RESPONSIBILITY

A. It is each bidder's responsibility to demonstrate its competency. Accordingly, the low bidder shall furnish to the Owner, if requested, within 24 hours of the bid opening the following information and materials:

1. How many years has your organization been in business as a Contractor?
2. How many years has your organization been in business under its present business name?
   a. Under what other or former names has your organization operated?
3. List the categories of work that your organization normally performs with its own forces.
   a. List the Work that you intend to perform with your own forces if you are awarded the Contract;
   b. List the percentage of the bid amount that represents the work you intend to perform with your own forces.
4. Three architect references, including their names, addresses, telephone numbers, and contact persons.
5. Three project owner references, including their names, addresses, telephone number and contact persons:
6. A current audited financial statement; however, a complete reviewed financial statement may be considered by the Owner if prepared in accordance with Generally Accepted Accounting Principles (including financial statement, footnotes, and auditor's review opinion) provided that additional information is available.
7. A Dunn & Bradstreet report, if available.
8. Evidence of satisfactory credit rating.
9. A statement of the bidder's current bonding limit from the Bidder’s surety or insurance agent; the name of the Bidder’s surety company and insurance company or companies, and proof of the rating of the Bidder’s surety and insurance companies (companies are required to be listed on the most current Federal Register, Circular 570, and hold an A. M. Best & Company rating of A- or Better).
   a) Proof of Insurance and Bonds must be on Surety/Insurance Company’s letterhead.
10. A listing of work in progress or under contract stating the following:
    a) The amount of the original contract
    b) The amount of all change orders to date
    c) The required substantial completion date.
    d) Estimated or anticipated date of certification of substantial completion
    e) Percentage of work completed and
    f) Name, address, telephone number and contact person(s) of the architect and construction manager or clerk of the works (if any).
11. A listing of all work completed during the last six (6) calendar years stating the following:
    a) The amount of the original contract.
    b) The amount of all change orders and their percentage of the Contract's total bid cost.

c) The required substantial completion date.
d) The actual date of certification completion and the date of final payment.
e) The name, address, telephone number and contact person(s) of the architect and construction manager or clerk of the works (if any) and the name, address and telephone number of the Owner.

12. A statement of whether the bidder, whether as a principal or an office of any predecessor or current entity, has defaulted or failed to complete on a construction project within the previous six (6) years and, if so, including information as to:
    a) The project
    b) The project owner
    c) The Architect and Construction Manager or clerk of the works (if any), and
    d) The circumstances of such default.
13. A listing of all claims made against any bonds issued for the bidder's performance, labor and material payment or maintenance within the past six (6) years identifying:
    a) The project and project owner.
    b) The surety, and
    c) The claimant
14. A listing of all arbitration proceedings or court proceedings completed or in progress during the last six (6) calendar years involving the bidder, identifying:
    a) Bidders' role in proceedings
        1) Did/Does bidder's role involve bidder's performance of any construction contract or warranty
    b) The parties to such arbitration or litigation
    c) The arbitrator, court or forum of such arbitration and litigation and
    d) The case or docket number of such arbitration or litigation
15. A listing of all claims made against bidder's workers' compensation and/or general liability insurance polices, and paid by bidder's insurance carrier(s) resulting out of construction projects on which bidder was awarded a contract, within the past six (6) calendar years identifying:
    a) The project and project owner
    b) The type of insurance(s) workers' compensation and/or general liability, and the insurance carrier(s)
    c) The claimant, the date of the claim and the event giving rise to the claim.
16. A listing of the names, titles and experience of officers, other principals and/or other key individuals in bidder's organization.
17. A listing of all construction projects within at least the six (6) prior calendar years on which the bidder has worked, identifying all items asked for in Sub-items 1.02.A.10 and 1.02.A.11 above, as well as the following:
    a) An identification of all change orders that resulted in the extension of time of completion of the project, and the aggregate number of days by which the original substantial completion date was extended thereby.
18. A statement regarding the bidder's prior experience working on a construction project involving multiple contractors.
19. A statement regarding the bidder's adherence to the Occupational Safety Health Act; the Pennsylvania Prevailing Wage Act; the Pennsylvania Steel Products Procurement Act; applicable federal and/or state statutes and regulations prohibiting discrimination on a Pennsylvania public works project; and/or all other applicable laws, regulations, acts as listed in the non-all-inclusive list of Article 13 in Section 007216 General Conditions.
    a) Regarding Bidder's adherence to OSHA requirements, Bidders shall submit their safety record, claims history, and any OSHA violations that have occurred in the past five years.

20. Include the following statement and signature lines verbatim as part of Bidder's Proof of Competency submission.

THIS IS TO AUTHORIZE THE PERSONS AND REFERENCES IDENTIFIED HEREIN, AS WELL AS ANY OTHER REPRESENTATIVES OF BUSINESSES/AGENCIES WITH PROJECTS WITH WHICH I OR MY COMPANY HAVE BEEN INVOLVED, TO SPEAK FREELY AND WITHOUT HESITATION TO REPRESENTATIVES OF THE OWNER, INCLUDING ITS ARCHITECT AND ATTORNEY RELATIVE TO ANY OF THE ABOVE MATTERS OR ANY OTHER SUCH PROJECTS, HEREBY RELEASING ALL PERSONS, FIRMS AND CORPORATIONS WHETHER NAMED HEREIN OR NOT, FROM LIABILITY OR FROM ANY ACTION, SUIT, CLAIM OR DEMAND ARISING OUT OF THE RELEASE OF SUCH INFORMATION.

_____

By:_____
(Title)

_____
(Address)

1.03 BID REJECTION

A. The failure to fully provide the foregoing information to the Owner or its representatives, may result in the rejection of the bidder's bid, at the sole discretion of the Owner.

1. Failure to disclose a past or current project in default or in arbitration/court proceedings is grounds for disqualification.

B. Additionally, any of the following shall subject the bidder to disqualification and his bid to rejection:

1. A bidder’s failure in the past to have timely completed the work in accordance with the construction contract documents, on a contract awarded to him by the Owner.
2. A bidder’s failure in the past to have prosecuted the work in accordance with the construction contract documents, on a contract awarded to him by the Owner.
3. A bidder who was awarded a construction contract with the Owner in the past, and whose contract with the Owner was terminated for cause.
4. A bidder who was awarded a construction contract with the Owner in the past, and whose contract with the Owner was declared to be in default.
5. A bidder on whose Performance Bond provided for the benefit of the Owner on a construction contract awarded by the Owner in the past, a claim was made and paid or otherwise adjusted by the Surety.
6. A bidder who has no prior, satisfactory experience working on a construction project involving multiple contractors.
7. Where a bidder has been involved on a construction project on which a significant delay existed between the date of issuance of a Certificate of Substantial Completion for the bidder’s work, and issuance of Final Payment to that bidder.
8. A bidder who has failed to comply with the Occupational Safety Health Act and/or its implementing regulations, and who has consequently been fined or otherwise subjected to civil penalties because of such noncompliance.

9. A bidder who has failed to fully comply with the Pennsylvania Prevailing Wage Act.
10. A bidder who has failed to fully comply with the Pennsylvania Steel Products Procurement Act.
11. A bidder who has failed to fully comply with applicable federal and/or state statutes and regulations prohibiting discrimination on a Pennsylvania public works project.
12. A bidder who has otherwise failed to fully comply with federal, state and/or local statutes, ordinances and/or regulations applicable to a Pennsylvania public construction project.
13. A bidder who has filed for bankruptcy, or who has been involuntarily placed into bankruptcy by his/its creditors, within five (5) years of the date of submission of his/its bid. This provision shall encompass predecessor corporations, partnerships, and/or other entities, and each of the principals involved in the bidding corporation, partnership or other entity.
14. A bidder who has, within the ten (10) years preceding the submission of his/its bid, been convicted by a federal or state court of a crime relating to his/its prosecution of a public works project in any jurisdiction within the United States. This provision shall apply to the entity submitting the bid, as well as to each of the principals involved in the bidding corporation, partnership or other entity.
15. A bidder who has a significant history of insurance claims paid, including but not limited to workers' compensation claims.
16. A bidder who has no prior satisfactory experience with critical path method (CPM) scheduling methods.
17. A bidder's failure to sign the Bid Form shall be conclusively treated as a nonresponsive Bid and the Bid shall be rejected.
18. A bidder who is currently under suspension or debarment by the Commonwealth of Pennsylvania, any other state, or the federal government, as specified in Section 002000.

C. By the submission of any bid, the bidder agrees that in the event its bid is rejected by the Owner for any reason and such rejection is contested by the bidder through the commencement of legal proceedings, whether in law or equity, the Owner shall be entitled to an award of reasonable attorney's fees and costs if the Owner's rejection of the contested bid is upheld, affirmed or otherwise not set aside.

END OF SECTION 004513

SECTION 007216 - GENERAL CONDITIONS

MERCER COUNTY AGRICULTURAL AND
CONSERVATION COMMUNITY
LEARNING CENTER AT
MUNNELL RUN FARM
41 MUNNELL RUN LANE
MERCER, PA 16137

FOR THE
MERCER COUNTY COMMISSIONERS
125 SOUTH DIAMOND STREET
MERCER, PA 16137
HHSDR #4826

The following AIA Document A201-2017, "General Conditions of the Contract for Construction" has been modified for specific requirements for this Project.

Any reference throughout the Contract Documents to a provision of AIA Document A201–2017, shall be to this modified AIA Document A201-2017.

Attachments following this Section:

Detailed Cost Breakdown Form

Material Source of Supply and Subcontractor Approval Form

Assignment of Rights Sales Use/Tax Refund Form

Contractor's Request for Stored Material Payment Form

Subcontractor/Supplier Payment Certification and Waiver of Liens Form

Payroll Certification Forms:
PA Department of Labor & Industry - Form LLC-25 Weekly Payroll Certification for Public Works Projects (formerly Form LIPW-128)

Request for Information (RFI) Form

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
Mercer County Agricultural and
Conservation Community
Learning Center at
Munnell Run Farm
41 Munnell Run Lane
Mercer, PA 16137

HHSDR #4826

THE OWNER:
Mercer County Board of Commissioners
125 South Diamond Street
Mercer, PA 16137

THE ARCHITECT:

HHSDR, Inc.»« »
«40 Shenango Avenue
Sharon, PA 16146

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™–2017, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. **The Contract Documents shall include Bidding Requirements, including, but not be limited to, advertisement or Invitation to Bid, Instructions to Bidders, the Contractor's Bid and Addenda or portions of the Addenda relating to any Bidding Documents.**

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

.1 If the Contractor has remedies available pursuant to the Agreement between the Owner and Contractor including these General Conditions, then the Contract Documents or other information supplied to the contractor in connection with this Project, including any deficiency, inconsistency or misrepresentation therein, shall not create any cause of action in favor of or against any third party whether such action may be for breach of contract, breach of warranty, negligence, misrepresentation or other tort, or otherwise including claims against the architect and its consultants, and their employees, officers and representatives.

.2 Except when Contractor is required to pursue a claim directly against another Contractor as directed elsewhere in the Contract Documents or its own subcontractors, Contractor agrees that any and all claims, disputes or legal actions filed or pursued by the Contractor in connection with this contract, the Contract Documents or the project, shall be filed or pursued only against the named Owner of the Project under the claims procedures set forth in this Agreement and that no claims or legal actions will be filed or pursued against the Owner's administrators, officers, directors, their employees, representatives, or its architect and/or their consultants, or their employees or representatives. Contractor agrees that this paragraph shall survive termination of this agreement. Contractor also agrees that this paragraph shall be binding whether or not it claims prior breach of this contract and that this paragraph shall apply to any and all claims including breach of contract, breach of warranty, negligence, misrepresentation or other tort, or otherwise.

§ 1.1.3 The Work

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

§1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the project before submitting a proposal. Such site visit shall be for the purpose of familiarizing the Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas.

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and

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dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

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

a. In the event of inconsistencies in the Contract Documents and/or between the Contract Documents and applicable standards, codes, and ordinances, the Contractor shall: (1) provide the better quality or greater quantity of work and; (2) comply with the more stringent requirements, in accordance with the Architect's interpretation. The terms and conditions of this Paragraph, however, shall not relieve the Contractor of any of the obligations set forth in Paragraphs 3.2 and 3.7.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.2.4 MISCELLANEOUS DEFINITIONS

.1 The term "product" includes materials, systems and equipment.

.2 The term "provide" includes furnishing and installing a product complete in place, tested and approved.

.3 The term "building code" and the term "code", refer to regulations of governmental agencies having jurisdiction.

.4 The terms "approved", "required", and "as directed" refer to and indicate the work or materials that may be approved, required or directed by the Architect acting as the agent of the Owner.

.5 The term "similar" means in its general sense and not necessarily identical.

.6 The terms "shown", "indicated", "detailed", "noted", "scheduled" and terms of similar import, refer to requirements contained in the Contract Documents.

.7 Where reference to "the Contractor" is made in AIA General Conditions of the Contract for Construction, Supplementary General Conditions and Instructions to Bidders, it shall mean "each" Contractor, unless specified otherwise.

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§ 1.2.5 The Contractor represents that it understands that the Contract Documents may (a) contain errors, omissions and/or inconsistencies; (b) that there may be representations made that are determined to be inaccurate or incorrect; and, (c) that the Owner may request that changes be made to the Contract Documents. Consistent with paragraph 1.1.2.1, the Contractor represents that when such issues occur on the project for which extra costs may result to the Contractor, the Contractor will only pursue such extra costs by requesting a change order in strict accordance with the change order requirements of this agreement and, to the extent any such change order is not agreed upon, shall only pursue claims for costs incurred in strict accordance with the claims procedures set forth in this agreement.

.1 Contractor acknowledges that the plans and specifications are intended only to show the intent of the completed Project. Contractor represents that it is qualified to construct the Project as depicted in the Contract Documents and to determine its own means, methods, techniques, sequences and procedures. To the extent that means, methods, techniques, sequences and procedures are identified in the Contract Documents, Contractor is required to independently evaluate those means, methods, techniques, sequences and procedures for the purpose of determining whether the means, methods, techniques, sequences and procedures depicted in the Contract Documents are adequate to construct the Project. Contractor further represents that it has based its bid upon its own determination of the means, methods, techniques, sequences and procedures required to construct the Project.

.2 If the Contractor asserts a claim against the Architect, Contractor agrees to limit the total liability of the Architect, its officers, employees, consultants and insurers to one-hundred thousand dollars ($100,000.00). This limitation of liability is applicable to any and all claims that can be asserted by the Contractor against the Architect. To the extent that a court of competent jurisdiction determines that the aforementioned limitation of liability is unreasonable, the Architect's liability shall be limited to the lowest legally sufficient amount to be an enforceable limitation of liability. The Architect, its officers, agents, servants, or employees shall not be liable to the Contractor for any indirect, special, consequential, or exemplary damages.

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

§ 1.4.2 To the extent that the contractor makes a representation in the conditions of the Contract, any such representation is a contractual obligation required to be performed and is a representation to the Owner and Architect upon which each of them are entitled to rely.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

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

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

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§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The only electronic format Contract Documents will be available in is portable document format (pdf); Contract Documents will not be available in any of these electronic formats: AutoCAD, Microsoft Word, Excel, etc.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

.1 The Owner will expect the successful Contractors to enter into "No Lien" Contracts.

.2 The Bidder agrees and acknowledges that the Owner is a "contracting body" under the Public Works Contractors' Bond Law of 1967, and the Work on the Project is public construction and not subject to the filing of Mechanics Liens, and further agrees to provide and specify in its subcontracts with Subcontractors and Suppliers for their acknowledgment that their sole remedy against the Owner exists only under the provisions of the Bond Law and in accordance with the Payment Bond and to indemnify and hold harmless the Owner from any claim under the Mechanics Lien Law, filed by its Subcontractors and Suppliers.

.3 Contractor shall obtain and have recorded a waiver of liens from all sub-contractors. In addition, Contractor shall post a bond guaranteeing payment for labor and materials provided by subcontractors.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the

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Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

§ 2.3.4 The Owner shall not be responsible for furnishing surveys (unless required for the execution of the work and requested by the Contractor in writing) or other information as to the physical characteristics of, legal limitations of or utility locations for the Project site, but shall furnish or cause to be furnished to the Contractor a legal description of the Project site, which shall not constitute one of the Contract documents. Contractor shall confirm the location of each utility, shall excavate and dispose of each on-site utility and shall cap each off-site utility as required by the Work and as may be included in the Specifications. The Contractor represents that it is familiar with the Project site and has received all information it needs concerning the condition of the Project site. The Contractor represents that it has inspected the location of the Work and has satisfied itself as to the condition thereof, including, without limitation, all structural, surface and subsurface conditions. The Contractor shall exercise special care in executing subsurface work in proximity of known subsurface utilities, improvements, and easements.

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

§ 2.3.6 No hard copies of Contract Documents will be provided to Contractor(s). The Contract Documents are available electronically for the Contractor to print (only in portable document format (pdf). Contractor(s) are required to print hard copies to be maintained on site, to be updated with Contract changes, and to be turned over to the Owner at completion of the work.

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.1 Each Contractor shall at all times keep a complete set of their Contract Documents on the Project, in good order, in the Project Office for the use of the Architect, the Architect's Representative and the Owner, also refer to Subparagraph 3.11.1.

.2 Such other additional instructions or detailed drawings as are necessary for the proper execution of the work will be furnished by the Architect.

§ 2.3.7 The Owner may have an Owner's Representative (Clerk of the Works) on the Project. Any dispute relative to quality of materials or work, or the manner of performing the work, shall be referred to the Architect for a decision. The Contractor shall extend to the Owner's Representative the same privileges with regard to access and cooperation as are extended to the Architect.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

.1 Execution of the Contract by the Contractor is a representation that the Contractor has thoroughly reviewed and evaluated the Contract Documents to determine whether the Contractor needs clarification or additional information of the contract documents or additional interpretation of the intent of the Contract Documents to determine its bid and that it has requested any needed clarification prior to submitting its bid. Contractor represents that it has the knowledge, skill and expertise to perform the work; that it understands that it must make reasonable inferences to determine portions of the work not shown in the Contract

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Documents that would be required for a proper and complete project, and it has included all costs for such inferences in its bid; and, that contractor is not relying on representations from the contract documents for the purpose of determining the means, methods, sequences or procedures of performing the work.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

.1 The Contractor shall be responsible for all work usual and customary to his specialization, unless specifically designated otherwise, whether it is indicated in the Contractor's Contract Documents or in other Contractor's Drawings. A copy of all related Drawings as listed in Section 000115, List of Drawings, shall be issued to all prospective Contractors for purpose of bidding as well as for construction of the project.

§ 3.2.3 It shall be the obligation of the Contractor to review the Contract Documents to determine and to notify the Owner and the Architect of any discrepancy with the building codes and regulations of which the Contractor has knowledge or should be reasonably able to determine. The Contractor shall not violate any zoning, setback or other locational requirements of applicable laws, codes and ordinances, or any recorded covenants of which the Contractor has knowledge. If the Contractor observes that portions of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, rules or regulations, the Contractor shall notify the Owner and Architect in writing, and necessary changes shall be accomplished by appropriate Modification.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

.1 The General Contractor is designated as the Lead Contractor for the Project. The Lead Contractor and other Prime Contractors are responsible for the coordination of the work. The Lead Contractor is responsible for making all coordination decisions not mutually agreed to by the affected Prime Contractors. Disputes between the Lead Contractor and one or more other Prime Contractors, and disputes between two or more Prime Contractors pertaining to the creation, application, and modification of the project schedule, the furnishing of resources to meet the project schedule, job coordination, and all aspects of the coordination, means and methods of construction shall be submitted promptly to the Lead Contractor for a final construction decision. The final construction decision of the Lead Contractor must at all times be consistent with the content and intent of the Contract Documents. The final construction

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decision of the Lead Contractor will be observed, accepted, and fully followed by all Prime Contractors and their Subcontractors on the project. The progress of the work in accordance with the final construction decision of the Lead Contractor shall not be delayed. The contractors, including the Lead Contractor, shall have no right of action against the Owner, Owner's Representative, or Architect in connection with any cost, loss, or delay suffered resulting from issues involving coordination of the Contractors' Work or a decision regarding the coordination of the Contractors' Work.

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

.1 Contractors whose failure to perform their Work or whose negligence in performing their Work, impacts other Contractors shall be responsible for damages incurred by the other Contractors that are necessary to maintain the project schedules.

.2 Contractors shall be responsible to protect their installed work until such work is turned over to and accepted by the Owner in writing. Any damage to such work shall be corrected by the Contractor initially responsible for the work, regardless of how the damage was sustained. Contractors shall refer to Paragraph 6.2.3.1 regarding claims against each other for work damaged by another Contractor.

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

§ 3.3.4 After Award of Contract, any claims for additional costs associated with completion of the Work within the required Contract time frames will not be considered. Contractors, who feel extra time, in any form such as shift work, overtime, and premium time, is necessary to meet Contract requirements regardless of trade, should include these costs in their bids. Contractors must recognize that although their work might not require shift, overtime, or premium time work for completion within the stipulated time frame, it may be required in order to allow other Contractors to complete within the time frame. Contractors must allow for these overtime requirements and include the costs necessary to allow the other Contractors to complete within the specified time. Failure to recognize the extra costs in his bid shall not relieve the Contractor from utilizing shift, overtime, or premium time work in performance of his Contract nor entitle him to additional compensation. Where installation work is part of the contract, all costs associated with meeting the time frames indicated in the construction schedules shall be included in the contract price.

§ 3.3.5 If the Contractor fails to supervise his workmen or subcontractors, the Owner shall withhold monies sufficient to protect the Owner's interest.

§ 3.3.6 No verbal agreement or conversation with any officer, agent or employee of the Owner or Architect, either before or after the execution of the contract, shall affect or modify the terms or obligations herein contained. Failure to comply with any or all of the above requirements will not relieve the contractor from the responsibility of properly estimating the difficulty or cost of successful completion of the work, nor from the responsibility for the faithful performance of the provisions of this contract.

§ 3.4 Labor and Materials

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

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect **according to Section 012513**.

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

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§ 3.4.4 The Contractor shall inform all workers on the Project of proper conduct expected of them by the Owner at all times. Obscene gestures, obscene pictorial, printed and/or written expressions and the use of profanity by the workers is forbidden.

§ 3.4.5 Smoking is prohibited from all areas of the facility (interior and exterior) in compliance with state and federal legislation. "Smoking" shall mean all uses of tobacco, including, but not necessarily limited to, cigarettes, cigars, pipes, chewing tobacco, snuff, and electronic nicotine delivery systems (ENDS) or vaping devices.

§ 3.4.6 The Contractor shall assure that his employees comply with the following:

- **.1 The contractor is solely responsible for the safety of his employees and to assure compliance with OSHA rules and regulations as stated in the project specifications.**
- **.2 Construction security means that the Contractor shall be responsible to protect and secure his own tools, equipment and materials. He is also responsible to protect the Owner's property and facilities which he occupies or uses.**
- **.3 Workers shall not operate radios, CD players, "Boom Boxes", or similar devices that may be a nuisance to surrounding buildings.**
- **.4 Stay out of building areas which are not a part of construction.**
- **.5 Dress in accordance with OSHA requirements.**
  - **a. Clothing shall not bear references to tobacco, drugs, alcoholic beverages, and/or profanity.**
- **.6 Do not use any facility, materials or equipment without specific permission.**
- **.7 No use of existing building restrooms.**
- **.8 Workers shall not possess or consume drugs, alcoholic beverages, and/or other controlled substances when on site.**

§ 3.4.7 The Contractor shall be responsible for enforcing the standards of conduct referenced in this Article 3.4.

§ 3.4.8 The Owner shall have the right to have the Contractor remove from the site all workers in violation of the above stated standards of conduct.

§ 3.5 Warranty

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

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 All materials and workmanship shall be guaranteed for a minimum of one year from date of Final Payment for the entire Project, except where a longer period is specified, and each Contractor shall make good without cost to the Owner any defective portion of the work of which he is notified within one year of the date of final payment of contract. Refer to Section 007316 – Insurance Requirements for required "Maintenance Bond". Repair or replacement of such defects shall extend to other work damaged thereby. Owner's rights and remedies hereunder shall be in addition to any other rights and remedies which Owner may have pursuant to law or this contract. Owner shall be entitled to all other rights and remedies provided by this contract and by law, in addition to the Warranty rights and remedies set forth in this paragraph.

§ 3.6 Taxes

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

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§ 3.6.2 Access to Accounting Records: The Contractor shall check all materials, equipment and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement, and the system shall be satisfactory to the Owner. The Owner or its representative shall be afforded access to all the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and such similar data relating to this Contract, and the Contractor shall preserve all such records for a period of twelve (12) years, or for such longer period as may be required by law, after final payment.

§ 3.6.3 The Contractor shall be aware that the Project Owner is a Pennsylvania tax exempt entity, and that Pennsylvania Sales and Use Tax must be paid for all materials and equipment with the exception of certain Building Machinery and Equipment (BME) as defined in applicable law (PA Act 45 of 1998). The Contractor is solely responsible to determine whether certain purchases within his Contract may be tax exempt for the Project Owner and whether the Owner may benefit from the Contractors reduction of said taxes in the calculation of his bid.

- **.1 Contractors are encouraged to take advantage of any sales tax exemptions for which Owner is entitled in computing the bid amount.**
- **.2 Contractors intending to purchase certain BME exempt from sales tax shall recognize that they must submit a Pennsylvania Department of Revenue Sales Tax Exemption Certificate (Form REV-1220) to their supplier(s) in accordance with applicable law, without benefit of the Owner's tax exemption number and/or Federal ID Number (EIN); the form should contain the statement, "Property or services qualify as building machinery and equipment, and will be transferred pursuant to a construction contract to [name of Owner]." The Owner will not provide their tax exemption number and/or Federal ID Number (EIN) to any Contractor, subcontractor, material supplier or other entity in assisting in making of tax-exempt purchases.**
- **.3 Regardless of whether Contractor has taken advantage of certain BME sales tax exemptions in the calculation of his bid, the Contractor shall be required to submit a signed and notarized "Assignment of Rights Sales / Use Tax Refund" form, as hereafter specified, as well as, assist the Owner in filing of all Petitions for Refund with the Commonwealth's Board of Appeals for taxes paid on tax exempt purchases for the Project.**
- **.4 Contractors shall submit to the Owner a letter identifying all materials purchased exempt of sales tax in their Contract, in order to assist the Owner seeking any refund on tax exempt items.**

§ 3.6.4 Assignment of Refund Rights: The Contractor agrees to assign and transfer to the Owner all his rights to sales and use tax which may be refunded as a result of a claim for refund for materials purchased in connection with this Contract, regardless of whether Contractor has taken advantage of certain non-taxable Building Machinery and Equipment (BME) in the calculation of his bid. The Contractor further agrees that it will not file a claim for refund for any sales or use tax which is subject to this assignment.

- **.1 Each Prime Contractor further agrees that he will assist the Owner in the preparation and submission of petitions for refund pertaining to those taxes.**
- **.2 Contractors shall be required to submit a signed and notarized "Assignment of Rights Sales / Use Tax Refund" form, within the time period specified for initial submittals in Section 011000. Sample form included following these General Conditions.**

§ 3.6.5 Contracts with Subcontracts: The Contractor agrees to include the "Access to Accounting Records" and "Assignment of Refund Rights" paragraphs, in full, in any contracts with subcontractors.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

- **.1 The Owner shall obtain the Building Permit for the entire project and pay all initial permit fees associated with the Building Permit under the UCC. All Contractors shall assist the Owner in obtaining the permit and shall cooperate in the notification of all required inspections under the scope of their contracts as pertains to the building permit and/or construction work, including paying for required inspections if not included in the initial building permit fee to the Owner. Each Contractor shall be responsible for obtaining and paying for all third party inspections**

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required under the scope of their contract as pertains to the UCC, PA Statewide Building Code. Each Contractor shall also be responsible for paying all costs associated with any re-inspections required as a result of incomplete/incorrect work.

.2 Each applicable Contractor shall make cash deposits required by Authorities having jurisdiction and shall pay for any and all fees, permits, road bonds, inspections and certificates as may be required for their work as well as for the repairing of streets, alleys, curbs, sidewalks, underground structures, sewers, mains and public or private property damaged as a result of execution of the work, and shall pay such fees as are required for moving of equipment required for the work. All permits, bonds and certificates must be submitted to the Architect.

.3 Each applicable Contractor(s) shall arrange to obtain all required general construction and/or HVAC, plumbing, and/or electrical equipment/system operating certificates from appropriate agencies, and shall make necessary deposits and pay for fees, permits, inspections and certificates as may be required for the work. All permits and certificates must be submitted to the Owner.

.4 The Contractor shall contact the local authorities regarding any ordinances which may restrict early morning, late evening, and/or weekend work hours, as well as any restrictions regarding access routes to the site.

.5 The General Contractor shall secure and pay for any required permit for temporary site identification signage.

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

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

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

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

§ 3.8 Allowances

§ 3.8.1 Cash allowances are not included in the bid specifications.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in

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attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

.1 **The Contractor's Superintendent shall be employed full time on the Project site during performance of all work under the Contractor's responsibility, including but not limited to, all work performed by Contractor's subcontractors. The Superintendent shall, on a full-time basis, manage, supervise, and direct all of the Work being performed by the Contractor's employees and all subcontractors.**

§ 3.9.2 The Superintendent shall be satisfactory to the Architect and Owner, and the Contractor shall not replace the Superintendent without the prior written consent of the Owner, which consent shall not unreasonably be withheld.

§ 3.9.3 The Contractor shall furnish a fully qualified and competent project superintendent subject to the approval of the Owner. At a minimum, the superintendent shall have at least ten (10) years experience of progressive experience as a construction superintendent.

§ 3.9.4 The proposed superintendent shall possess strong supervisory, project scheduling and management skills and excel in planning and directing complex projects. The proposed superintendent shall be able to analyze plans and specifications to determine that time frame, staffing requirements, and appropriate resources are available for various phases of construction; direct and coordinate all construction activities to maintain optimum efficiency of operations and effectively utilize human resources, machinery and equipment; establish work plans for each construction phase, assign duties, provide technical advice, prepare schedules, and set deadlines to ensure timely completion of work.

§ 3.9.5 The Contractor shall submit the qualifications of the project superintendent to the Owner for approval in the form of a resume that shall include a list of major projects, certifications and affiliations. The written qualifications also include a detailed list of training seminars and evidence of certifications/credentials, etc. The Owner also reserves the right to conduct a personal interview of the prospective superintendent , in addition to the above requirements.

§ 3.9.6 Under no circumstances shall work commence on the project site until the contractor's designated project superintendent has been approved by the Owner. If the Owner rejects the Contractor's project superintendent, the Contractor shall submit the name of an alternate superintendent for the Owner's consideration.

§ 3.9.7 The approval of a contractor's project superintendent shall not, under any circumstances, be considered a waiver of the contractor's obligation to perform the work according to the terms of the contract documents.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The **General** Contractor **(Lead Contractor for the Project)**, promptly after being awarded the Contract **(within the time period specified for submittals in Section 011000), shall submit to the Architect and the Owner's Representative a comprehensive construction schedule, indicating dates for beginning and completing the various subdivisions of the work. The scheduling requirements are set forth in detail in the contract and in the specifications. By submitting its bid and by executing the contract the contractor represents that it understands that the scheduling requirements are intended to place the burden of early planning, active coordination and communication regarding the planned work on the Contractor and that the purpose of the scheduling requirements is an essential part of meeting that contractual burden. Any failure by the contractors to comply with any scheduling requirement shall be a material breach of this Contract and if the Contractor fails to comply strictly with any such requirements, Contractor shall not be entitled to make any claim for any damages that occur because of impacts to its work or delays, whether or not the Owner has also materially breached its contract by failing to perform in accordance with its obligations or actively interfering with the contractor's work on the project. Other Contractors shall coordinate the requirements of their work with the General Contractor so that the construction schedule(s) will indicate the obligations of each Contractor for uninterrupted performance of the work to the date of completion. The schedule(s) shall be reviewed by the Owner's Representative, Architect, Owner and all Contractors. Each Contractor, the Owner's Representative, Architect and the Owner shall receive a copy of**

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the reviewed and revised construction schedule(s). The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. **The Schedule shall not be modified or extended without prior approval of the Owner in each instance**.

.1 **Construction schedules representing anything less than a five day work week shall not be permitted.**

.2 **Coordination of the work between contractors shall include, but is not limited to, exchange of information about the extent of work, duration of work, identification of work required by others to facilitate the work and the required start, duration and finish times for the work activities.**

.3 **Contractors shall submit all construction schedule information for coordination with the General Contractor, and the construction schedule shall be approved and signed off by all Contractors and reviewed by the** Owner's Representative**, Architect, and Owner, prior to approval of any Contractor's first payment application. Monthly updates to the construction schedule shall be submitted with Contractor's applications for payment each month, as stated in Paragraph 9.3.1 of this Section.**

.4 **Failure of the Contractor to submit construction schedules by the dates specified shall result in Architect's not approving Contractor's application for payment that month.**

.5 **By submitting an application for payment, Contractor represents that it has met each and every scheduling requirement up to that period covered in the application. Contractor agrees that no waiver of any scheduling requirement can occur unless the contractor indicates in writing that it does not intend to perform such requirement before such requirement is due to be met and OWNER ACKNOWLEDGES IN WRITING THAT THE CONTRACTOR IS RELIEVED OF ITS OBLIGATION TO PERFORM THE REQUIREMENT.**

.6 **The General Contractor shall utilize the Critical Path Method (CPM) for scheduling all work and shall provide, for record purposes, the Architect and** Owner's Representative **with electronic data files (on useable and standard discs) of each submittal of construction schedules (base line, monthly, etc.) in addition to the hard copies specified above.**

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

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

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

.1 **The Contractor shall submit to the Architect, the names and addresses of all sources of materials, including manufacturers, products, and subcontractors to be used on the Project as stated in Paragraph 5.2.1 of this document. Submissions shall be made within the time period specified for Submittals in Section 011000. No materials shall be delivered to the site prior to the Architect's approval of the source of supply. Forms for submission will be available from**

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the Architect. If the Owner or the Architect has reasonable objection to any proposed material or source of material, or subcontractor, the Contractor shall submit a substitute to whom the Owner or the Architect has no reasonable objection, and the Contract sum shall be unchanged as a result of any such substitutions.

.2 Failure of the Contractor to submit Material Source of Supply, Shop Drawings, and Color Samples by the dates specified shall result in Architect's not approving Contractor's application for payment that month.

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

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

.1 All materials submitted as samples shall be properly labeled and delivered to the Architect's office. Materials will be examined by the Architect and, if approved, will be signed, dated and delivered to the project site. Approved samples shall remain on the project site for use in checking the material or equipment incorporated in the work.

.2 In instances where materials will affect the color planning of the work, samples of the colors will be submitted for approval and selection by the Architect within the time period specified for Submittals in Section 011000.

.3 Samples of materials which the Architect deems necessary to be tested shall be submitted in duplicate to approved testing laboratories. The Architects decision as to those materials requiring laboratory testing shall be final. The Contractor shall prepare and forward to testing laboratory all materials requiring tests, shall pay for all expenses involved in connection thereof and shall cause the testing laboratory to forward the results directly to the Architect.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action. **The Contractor's obligations are not changed by an approval of any shop drawing or other submittal. If the contractor intends that a change to the Contract be made by any information in a shop drawing, he will affirmatively state that the shop drawing depicts a change in the work and will submit a written request for change order in sufficient time for the Architect to understand that a change order is being requested before the time the Architect's approval of the shop drawing is required. No notation, mark or other comment by the Architect on a submittal or in a response to a Request for Information shall constitute a change in the Contract. If the Contractor asserts that any notation, mark or comment by the Architect contained in a submittal or response to a Request for Information will change the Contract, the contractor will immediately follow the procedures set forth in paragraph 15.1 to request and pursue a change in the Contract.**

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

.1 Contractor agrees to submit all Submittals to the Architect for review together with all other submittals necessary for the review of the particular Submittal. If all submittals necessary for a review of the particular Submittal are not made simultaneously, the Architect shall return the Submittal with a written request for it to be resubmitted with the particular Submittals necessary for the Architect's review. In such cases, the Architect's time for reviewing the submittal will begin when it receives the necessary submittals for review of the particular Submittal.

.2 All submissions of materials, samples, shop drawings or product data to the Architect shall be accompanied by a letter of transmittal from the Contractor listing Project name, date, items and numbers of drawings or product data sheets contained in the submission.

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.3 **The Contractor shall submit to the Architect for his review, Shop Drawings and/or Product Data of all items requested by the Architect and by the appropriate sections of the Specifications. The Shop Drawings, Submittals, and Product Data may be made electronically by email to the Architect's designated representative identified at the Initial Job Conference or as otherwise designated, or by sending two hard copies of the submittal to the Architect's office to the attention of Architect's designated representative identified at the Initial Job Conference or as otherwise designated (one set for the Architect and one set for the Owner). Emailed submittals are preferred in 8 ½" x 11" format, but also acceptable in maximum 11" x 17" format. Submittals larger than 11" x 17" format shall be submitted via two hard copies to the Architect's designated representative. The Architect will return one electronic copy (scanned PDF) showing the Architect's comments and review status of the submittal. The Contractor shall be responsible to produce his own paper copies as required and to coordinate work with all trades. No Shop Drawings or Product Data shall be submitted prior to the submission and Architect's approval of the Source of Supply. Shop Drawing shall give complete information necessary and shall be made in conformity with the best modern practice. Reproduction of any type made directly from the Architect's design documents will not be acceptable as shop drawings. All Shop Drawings and Product Data shall bear the name of the Project. All Shop Drawings and Product Data shall be approved by the Contractor prior to submission and shall bear the Contractor's approval stamp, signature and date of approval, as well as the name of the individual who reviewed the submission and found it to be in compliance with the Contract Documents.**

a. **Contract Documents will not be available in electronic format, i.e., AutoCAD, Microsoft Word, etc., for use by Contractors in preparation of Shop Drawings.**

b. **Electronic submission of shop drawings will be permitted as set forth above.**

c. **The Contractor shall not send Submittals of any kind through Project Management Software.**

.4 **Once the Architect has reviewed and accepted a Shop Drawing submittal, all copies not required by the Architect, Engineer, and/or** Owner's Representative **will be returned to the submitting Contractor. The submitting Contractor shall be responsible for distributing acceptable, as stamped by the Architect or Engineer, Shop Drawings to all other Prime Contractors requiring coordination of said work. "Acceptable" or "Reviewed" as stamped by the Architect or Engineer shall be defined as the Shop Drawing does not require "Resubmission" by the Architect or Engineer.**

.5 **Upon completion of the Project, the Contractor shall issue two hard copies of all approved Shop Drawings, Submittals and Product Data with the Operations and Maintenance Manual.**

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

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

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of

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architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.14.3 Each Contractor is responsible for the size and location of all chases and openings required for the proper installation of all work in their contract and shall be responsible for all cutting and patching for such chases and openings.

.1 Where existing equipment/fixtures are to be removed and no new equipment/fixtures are to be installed in that location, the Contractor removing the item is responsible for patching the opening to match adjacent materials. Surrounding surfaces shall be thoroughly cleaned of all previous paint overruns, caulking, discharged dirt, etc., by said Contractor. Surfaces include exterior and/or interior locations.

§ 3.14.4 The General Contractor, however, will construct or have built into the building walls and partitions in new construction and renovation areas all such chases as are necessary, providing the General Contractor is notified of such openings and chases by the other Contractors.

§ 3.14.5 Contractors requiring chases built into new construction shall furnish the General Contractor with detailed drawings showing the size and location of each and every chase. If this information is not transmitted before the walls, partitions, etc. are built, then the General Contractor will not be liable for the cost of the construction of these chases and openings and they will then be built by the General Contractor but at the expense of the Contractor concerned.

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§ 3.14.6 Unless otherwise provided, each Contractor shall furnish and install all sleeves, thimbles and inserts necessary for the installation of their work at the proper and exact location and in sufficient time as not to impede the work of any other Contractor.

§ 3.14.7 Any cost due to defective or ill-timed work shall be borne by the party responsible.

§ 3.14.8 Site Work Utility Trenches: Trenching and backfilling shall be by the contractor, additionally, trenches occurring in areas not designated to receive new finishes shall be resurfaced/seeded to match existing: Utility trenches (gas, storm, water, sanitary, electric, etc.) installed through existing surfaced areas shall be backfilled with compacted fill and patched with bituminous paving and/or concrete as may be required in a thickness equal to the existing surface material. Trenches installed through existing non-surfaced areas shall be backfilled with compacted fill and re-seeded to match existing.

§ 3.15 Cleaning Up

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

.1 The General Contractor shall provide rubbish containers, as specified in Section 015000 (Temporary Facilities and Controls), and pay for the removal of rubbish and debris from the project site. All Contractors are responsible for the removal and depositing of their rubbish and debris into containers and establishing a payment plan to the General Contractor for use of said containers, as specified in Section 015000.

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

§ 3.16 Access to Work

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

§ 3.16.2 Job conferences will be held while construction is in progress. Each Contractor's representative shall be in attendance. The Contractor shall cause representative of all Sub-contractors designated by the Architect also to be in attendance. All such representatives shall have such authority as is necessary to bind their respective principals. The schedule of conferences will be determined by the Architect. At the job conferences all representatives shall be prepared to state the amount of their respective portion of work completed during the previous work period and what portion is scheduled to be undertaken during the upcoming work period. Contractors' reports shall reference the corresponding dates and anticipated work itemized on the reviewed comprehensive construction schedule. Problems of co-ordination and clarifications shall be reviewed and discussed at these conferences. Failure by the Contractor to provide such representation shall result in the Architect withholding monies from that Contractor's Monthly Application for Payment and/or withholding certification of the entire monthly application for payment.

§ 3.17 Royalties, Patents and Copyrights

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

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§ 3.18 Indemnification

§ 3.18.1 The Contractor shall indemnify, defend and hold harmless the Owner, Owner's Representative, **Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to, attorneys' fees and defense costs, arising out of or resulting from performance of the Work, to the extent caused in whole or in part by the acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts or omissions they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist. The Contractor agrees to and does hereby assume on behalf of the Owner and Architect the defense of any action at law or in equity which may be brought against such indemnified parties by reason of claims for which indemnification is owed hereunder, and will pay on behalf of such parties, upon their demand, the amount of any judgment that may be entered against any of them in any such action. In the event that any claim, loss, cost, expense, liability, damage or injury arises or is made, asserted, threatened against the Owner for which the Contractor or its insurer does not admit coverage, or if the Owner reasonably determines such coverage to be inadequate, the Owner shall have the right to withhold from any payments due or to become due to the Contractor an amount sufficient to protect the Owner from such claim, loss, cost, expense, liability, damage or injury, including attorneys' fees and expenses reasonably necessary for the defense thereof.**

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

§ 3.19 SANITARY PROVISIONS

§ 3.19.1 The General Contractor shall provide and maintain sanitary provisions (temporary toilet facilities) as specified in Section 015000 (Temporary Facilities and Controls).

§ 3.20 TEMPORARY UTILITIES (WATER, ELECTRIC, HEATING AND VENTILATING)

§ 3.20.1 Refer to Section 015000 (Temporary Facilities and Controls).

§ 3.21 MAINTAINING EXISTING SYSTEMS

§ 3.21.1 Refer to Section 015000 (Temporary Facilities and Controls).

§ 3.22 FIELD OFFICES AND SHEDS

§ 3.22.1 Refer to Section 015000 (Temporary Facilities and Controls).

§ 3.23 BLASTING

§ 3.23.1 No blasting shall be performed on the Project Site.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

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§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. **The Contractor's Request for Information shall be submitted on the form provided by the Architect. The Contractor shall not submit Requests for Information through any Project Management software or upon any other type of form prepared by the Contractor.** The Architect's response to such requests will be made in writing within**fifteen (15) business days of receipt of written request for information**. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. **No delay shall be recognized concerning the time for the Architect's response, until 15 business days after a written request for information has been received by the Architect and the Architect has not provided a response.**

.1 The Contractor shall submit written Requests For Information (RFI) to the Architect a minimum of fifteen (15) business days prior to requiring the information and/or clarification to carry out the work.

.2 Requests for Information, submitted to the Architect, will not be accepted and will be returned un-answered for any of the following:

i. Dimensions, unless such dimensions cannot be determined from field measurements and/or from associated dimensions shown throughout the drawings, sections, details, and/or technical specifications.

ii. Substitutions. Substitutions may only be submitted on Form 012513.25 according to Section 012513.

iii. Coordination issues between trades/Contractors.

iv. Partial and/or fragmented Shop Drawing submittals, i.e., details, data sheets, etc., are not to be submitted as Requests for Information.

.3 The Architect will charge the Contractor for his time involved in responding to Requests for Information that can be answered from information shown elsewhere throughout the drawings, sections, details, and/or technical specifications; and/or that can be resolved through coordination of trades/Contractors involved.

.4 The Architect's form for "Request for Information" submittals is attached following these General Conditions.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 The Contractor, within the time period specified for submittals in Section 011000, shall furnish in writing to the Owner through the Architect (1) the name, trade, and subcontract amount for each subcontractor, (2) the names of all persons or entities proposed as manufacturers of the products identified in the specifications (including those who are to furnish materials or equipment fabricated to a special design) and, where applicable, (3) the name of the installing subcontractor, on "Material Source of Supply" form as included following these General Conditions and as provided by the Architect. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. **And the Contract sum shall be unchanged as a result of any such substitutions.**

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

§ 5.2.5 The Contractor shall not contract with sub-contractors for more than 85% of the Contractor's Work for this Project. A minimum of 15% of the Contractor's Work must be completed by the Contractor.

.1 100% of a sub-contract must be completed by the sub-contractor's own employees; labor sub-contracts shall not be sub-sub-contracted.

§ 5.3 Subcontractual Relations

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

§ 5.3.2 Contractor must include all provisions of this contract in its Subcontractor agreements binding its subcontractors to the same extent the Contractor is bound herein. In addition, Contractor must specifically insert (and not just incorporate) provisions requiring the Contractor's subcontractors to indemnify, hold harmless and defend the Owner, Architect, and their consultants, administrators, officers and employees (including waiver of worker's compensation statutory protection) to the same extent the Contractor is bound by the Contract.

§ 5.3.3 Except as may be otherwise provided in these General Conditions, Sub-Contractors may make claims only against the Contractor with whom the Sub-Contractor has entered into an agreement to perform work.

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§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces **with the Lead Contractor of the project. The General Contractor is the Lead Contractor. The Lead Contractor and other Prime Contractors are responsible for the mutual coordination of the work of the Project and with the Owner's own forces. The Lead Contractor and other Prime Contractors shall prepare Construction Schedules as stated in Paragraph 3.10.1. The Lead Contractor is responsible for making all coordination decisions not covered by the mutually prepared Construction Schedule as stated in Paragraph 3.3.1.1.**

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the

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Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3

§ 6.2.3.1 If a Contractor, its agents, servants, employees or sub-contractors, including the sub-contractor's agents, servants or employees, cause damage to the property or Work of another Contractor, cause delay or interference to any other contractor or cause any other additional expense or damage, the Contractor shall make claims only against such other Contractor or Contractors who was or were the cause of such expense or damage in whole or in part, and shall settle by agreement or, if unable to settle, by binding arbitration by filing such unresolved claim with the American Arbitration Association pursuant to the Construction Industry Arbitration Rules then in effect. The Contractor agrees that such disputes will not delay the project. The Contractor acknowledges and agrees that neither the Owner nor the Architect shall be a party to such claim or dispute between the Contractors, even if the Owner or Architect were in part to blame for such damage. The Contractor also acknowledges and agrees that the rights of the Owner to withhold payment to another Contractor, terminate another Contractor, or to demand compliance by another Contractor with the terms of the Owner's contract with that other Contractor are rights of the Owner, and that the Owner is not required to take advantage of or act upon its rights for the benefit of the Contractor. In addition, the failure of the Owner to take advantage of or act upon its rights under contracts with other Contractors shall not constitute active interference of the Owner. It is agreed that the intent of this subparagraph is to create a right of action for the benefit of each of the Contractors on the Project to and for each other to the extent described hereinabove and serves to raise the Contractors on the Project to the status of Third-Party Beneficiary of each of the other Contractors' contracts only as to the right of action described in this subparagraph.

§ 6.2.3.2 The Contractor, by entering into the Contract for Construction assumes duties to cooperate with the other Contractors to coordinate their Work with other Contractors' Work and to accomplish all of the Contractors' Work within the time established in the Contract Documents.

§ 6.2.3.3 The Contractor agrees that the right of action contained in this subparagraph is provided as valuable consideration to the Contractor, and the Contractor, acknowledges and agrees that claims against the Owner and Architect for damages resulting from other Contractors, as described hereinabove, are hereby prohibited.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order,

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Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

.1 The change in the Work;

.2 The amount of the adjustment, if any, in the Contract Sum; and

.3 The extent of the adjustment, if any, in the Contract Time.

.4 No work shall be performed until Change Orders have been issued and signed as per Change Order requirements, except in case of emergency as described in Article 10, subparagraph 10.6.1. In such case the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3. The Contractor represents that any change order agreed between the Owner and Contractor on this project will include all costs associated with the additional work described in the change order, including all costs of associated delay, acceleration, inefficiency and overhead, as well as costs of material, labor and supervision. To the extent that any request for change order or correspondence prior to the signed change order is contrary to this paragraph, such requests or correspondence shall have no effect.

.1 The Contractor represents that it has the skills, expertise and cost accounting programs and/or tools necessary to maintain a record of all costs associated with any change in the work and that it will maintain a complete record of all costs associated with a change at the time such costs are incurred. The Contractor will create a cost item in its cost recording system for each change for which it intends to request a change order. At the time the Contractor requests a change order, it will identify the cost reporting reference number and will provide all supporting documentation maintained by the Contractor for all labor and material costs, including certified payroll, invoices, record of equipment costs and costs for overhead, supervision and tools. The Contractor will update its cost system as necessary to capture all costs associated with a change in the work and will regularly update the Owner as costs are incurred for which it desires to be paid. Once a change order is issued for a change in the work, the contractor shall not be entitled to any other costs or damages, including but not limited to any costs for inefficiencies, acceleration delays or other costs, that result from the change in the work. The Contractor will provide the information required of this provision in strict accordance with the change order provisions of this contract and acknowledges that the Owner and Architect have a right to rely on the Contractor's strict compliance, including compliance with time requirements such that the Owner and Architect have an opportunity to minimize the costs associated with the change request by timely submission of the information required under this paragraph. The intent and requirement of this paragraph is for the contractor to provide all facts, analysis and evidence of this claim as early as is practicable so that the Owner has the opportunity to minimize damages and fully evaluate the contractor's claim without incurring litigation costs. The Contractor shall not reserve rights to damages or present claims for damages or evidence of damages at any arbitration or trial that were not presented to support its Change Order request and Notice of Claim documentation. It is material to this contract that the Owner and Architect be given an opportunity to review the totality of the evidence the Contractor intends to present in connection with any change order request at the time the change order request is being considered.

.2 Payment of a change order shall constitute accord and satisfaction of all claims in connection with the change or changes to the Contract addressed by the change order, and it is understood and agreed that a signed change order form shall be the complete and fully integrated agreement for all related costs and that there are no oral or written understandings, representations or agreements, directly or indirectly, connected with the Change Order that are not affirmatively stated on the signed Change Order form. The contractor's execution of a change order constitutes a representation that it will make no further claims for damages. Contractor shall not be permitted to execute any Change Order with a reservation of rights to later seek damages for impacts, delays, or acceleration of it's work.

.3 Any change (Add and/or Deduct) to the Contract amount as a result of a Change Order shall be based upon the Detailed Cost Breakdown as submitted by the Contractor and reviewed by the Architect.

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.4 **For any Change Order work not itemized on the Detailed Cost Breakdown, the change to the Contract amount shall be an agreed upon amount by the Owner and the Contractor based upon a cost breakdown of labor and/or materials plus ten percent for overhead and profit. Any increase to Bond costs shall be included within the ten percent overhead amount.**

.5 **For Change Order work for Subcontractors, the Contractor shall be entitled to the cost of the Subcontractors work plus five percent for overhead and profit. Any increase to Bond costs shall be included within the five percent overhead amount.**

.6 **If additional time is required as part of a change, the cost impact where additional costs are permitted under a specific section of the contract documents shall be included in the Contractor's overhead and profit. There shall be no additional contract time if the change order states "0" days is added to the Contract.**

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon; **Unit prices stated on the Contract Proposal Form by the Contractor shall be added to or deducted from the Contract Sum only if directed to do so by the Owner or the Architect. Any work described as a unit price item for additional work shall not be considered as part of the Contract unless so indicated by Change Order during the performance of the work. The Owner reserves the right to perform, or otherwise have performed, the work described as unit price work in the Contract Documents. Unit prices shall include costs of all bonds, insurances, overhead, profit, supervision, and Contract time.**

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. **Cost** for the purposes of this Section 7.3.4 shall be **determined by the Detailed Cost Breakdown as submitted by the Contractor and reviewed by the Architect, and/or Documentation of Costs as specified in 7.2.2.1.**

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith,

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including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual cost, **including overhead and profit credit,** as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

.1 There is intended herein to be a differentiation between "Substantial Completion" and "Final completion". Substantial Completion is as defined in Paragraph 9.8.1. Final Completion shall be when the Contract is fully performed, including all Punch List items.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.4 Cold or freezing weather shall not be considered an excuse for the stopping of work under this contract. The Contractor shall use all such methods of temporary construction as may be necessary and with the use of temporary heat, continue the work throughout the winter. The temporary construction shall be of

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such construction and materials as will properly enclose the work and maintain a temperature of not less than 50° F.

§ 8.2.5 If low temperatures make it impossible to continue operations safely by use of cold weather precautions, the Contractor shall cease work and notify the Architect and Owner by letter. When work is resumed the Contractor shall notify, by letter, the Architect and Owner. Such stoppage shall not constitute an extension of the completion date.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

.1 **No Change Order extending the Contract Time shall result in any increased payments to the Contractor for extended overhead, delay damages, "impact" damages, loss of efficiency, loss of productivity or any other similar form of loss, damage or compensation.**

.2 **No payment or compensation or claim for damages shall be made to the Contractor as compensation for damages for any delays or hindrances from any cause whatsoever in the progress of the work, notwithstanding whether such delays be avoidable or unavoidable. The Contractor's sole remedy for delays shall be an EXTENSION OF TIME ONLY, pursuant to, and only in accordance with this Paragraph 8.3, such extension to be a period equivalent to the time lost, day for day, by reason of any and all of the aforesaid causes, as determined by the Architect. In consideration for this grant of time extension, the Owner and/or Architect shall not be held responsible for any loss or damage or increased costs sustained by the Contractor as a result of any delays caused by the Owner or Architect or any other Contractor or on account of the aforesaid causes or any other cause of delay. In the event the Contractor shall choose to litigate this clause or issue to seek compensation for delays, and the Contractor is not the substantially prevailing party in said litigation, the Contractor shall reimburse the Owner and the Architect for their reasonable attorney's and expert witness fees and all other costs and expenses incurred by them in the litigation. Substantially Prevailing shall mean that the Contractor recovers an award that is (1) greater than the highest amount of any settlement offer made to resolve the claim; or, (2) greater than 60% of the Contractor's claim for damages if the highest amount offered to settle the claim is 60% or less of the amount of the Contractor's Claim; that the Contractor has alleged it is entitled to in the litigation.**

.3 **No price adjustments will be made to the Contractor for increased material, fuel, etc., costs resulting from construction delays caused by the Contractor or any of the other Contractors performing work on the site.**

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. **To the extent that Contractor may be entitled to damages for delay, interference, inefficiency or lost productivity, such damages shall be submitted in the Contractor's request for Change Order and Notice of Claim to be included in an appropriately executed Change Order. The legitimate right to such (including the truth of the facts asserted as the basis for the claim) and the accuracy of the amount of such costs or damages shall be verified by affidavit and submitted with appropriate backup information to support any such amount. Contractor acknowledges that it is not entitled to damages for delay, interference, acceleration or inefficiency in any amount other than the amount of any agreed Change Order. To the extent that a Change Order cannot be agreed to, Contractor shall submit a claim in accordance with the provisions of Article 15. For any such claim that is submitted or pursued, Contractor acknowledges that it is not entitled to any amount greater than the verified amount submitted in its request for a Change Order.**

§ 8.3.4 DAMAGE CLAIMS FOR DELAYS CAUSED BY CONTRACTORS, SUBCONTRACTORS AND SUPPLIERS OR AN EMPLOYEE OF ANY OF THEM:

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.1 **The Owner is not responsible for delays caused by any Contractor. The Owner is not responsible for problems caused by the failure of a Contractor to coordinate its work with other Contractors. The Owner is not liable for any damages suffered by a Contractor arising from any Contractor's delays and/or failure to coordinate its work. Contractor hereby waives and releases the Owner from any liability and damages caused by lack of coordination by a Contractor, or between or among the Contractors, including their subcontractors and suppliers.**

.2 **The Architect and the Owner and their representatives shall not be liable to a Contractor for any increased costs or damages for defective work, interference, or delays resulting from any conflict between or among the Contractors, their subcontractors and suppliers. Neither the Owner nor the Architect shall be a party to disputes or actions between or among the Contractors or their subcontractors and suppliers concerning such additional expense or damage.**

.3 **It is agreed by all parties that disputes or actions between Contractors concerning any additional expense or damage herein before mentioned shall not delay completion of the Work, which shall be continued by the parties pending final resolution of a claim including judicial proceedings.**

.4 **Each Contractor hereby waives privity of contract defenses and agrees that other contractors have the right to file claims in a binding arbitration with the American Arbitration Association pursuant to the Construction Industry Arbitration Rules then in effect against Contractor in the event Contractor is alleged to have caused damages to another Contractor by reason of delay or lack of coordination. Neither the Owner nor the Architect shall be a party to such Arbitration.**

.5 **It is agreed by the parties to this Contract (the Owner as promisee and the Contractor as promisor) that the intent of this Section 8.3.4 is to benefit the other and is the mutual intents of the Owner and the Contractor that this Section 8.3.4 raises the Contractor and such other Contractors to the status of third party beneficiaries only as to the terms and conditions of Section 8.3.4. The Contractor agrees that Section 8.3.4 is provided as a benefit to the Contractor and that the Contractor specifically excludes, releases, foregoes and waives any claims against the Owner or the Architect for extended overhead, delay damages, "impact" damages, loss of efficiency, loss of productivity acceleration, or any other similar form of loss, damage or compensation, or other damages related to any delays whatsoever or from any amendment to the Construction Schedule.**

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Within the time period specified in Section 011000, the Contractor shall submit on the form required by the Architect (sample form included following these General Conditions), a Detailed Cost Breakdown of scheduled value of all items of work entering into the Contract. This detailed breakdown will show quantities of the respective items and the allowance for labor, material and other costs entering into each item. The detailed breakdown, when reviewed by the Architect, shall be used as a basis by the Contractor in preparing monthly estimates for payment and shall, as accurately as possible, reflect the true division of costs of the respective items entering into the Contract. Contractor shall submit Detailed Cost Breakdown by the date specified and prior to submitting any application for payment. No application for payment shall be processed until the Detailed Cost Breakdown is submitted and accepted.

§ 9.3 Applications for Payment

§ 9.3.1 On a specified day of each month, as determined at the Initial Job Conference, the Contractor shall submit to the Architect an itemized Application for Payment **on A.I.A. Document G702**, prepared in accordance with **and accompanied by** the schedule of values **A.I.A. Document G703** for completed portions of the Work. The application shall be notarized and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage provided for in **Paragraph 9.3.1.3 Number of required notarized copies to be submitted to be determined at the Initial Job conference.**

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a) **Contractors shall submit monthly progress construction schedule updates with rough draft (pencil copy) of request for payment application each month for approval by the Architect and Owner prior to submittal of specified hard copy of payment application in order for payment application to be approved. Failure by the Contractor to include updated scheduling information with the monthly payment application request will be cause by the Architect to not approve the payment request.**

b) **Any update to the construction schedule reflecting a revision to the original reviewed comprehensive schedule shall include a narrative as to the revision (cause, corrective action taken, etc.), a statement of coordination resolved among all Prime Contractors regarding the revision, and a verification that Project Completion dates remain intact.**

c) **Any updates/revisions to the construction schedule shall be approved and signed off by all Contractors and reviewed by the Architect and Owner prior to approval of any Contractor's monthly payment application.**

d) **Submittals of all Color Selectors/Samples, Shop Drawings, etc., shall be completed within the time period specified in Section 011000. Should any of these items remain outstanding beyond that time period, no further payments will be processed.**

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

.1 **Contractor shall submit with the Application for Payment each month, a Sworn Statement stating that the Contractor has paid all Subcontractors of whatever tier who have performed Work or provided equipment and materials for the Project in the full amount to which the Subcontractors are entitled to date and waives any right that the Contractor, his subcontractor, and/or his suppliers have to file a Mechanic's Lien for the work, material and/or supplies provided to date. (sample form included following these General Conditions)**

§ 9.3.1.3 Estimates for payment Documents will require breakdown of the total work completed to date of submission. From this total will be deducted a ten percent retainage. From the resultant amount will be deducted all previous payments. At such time that the Contractor determines that 50 percent of the work has been completed the Contractor shall notify the Owner, Architect and the Contractor's Surety in writing of this fact and upon the Owner's verification of such completion, retainage shall be reduced from 10% to 5% unless the Contractor is not making satisfactory progress, or unless there is specific cause for greater withholding. The retained five percent will be processed for payment on the issuance of the Certificate of Substantial Completion, unless amounts are withheld as otherwise provided in this agreement.

§ 9.3.1.4 Should the Architect, at any time during the progress of the work, consider the amount withheld on Monthly Estimates for Payment to be in excess of the amount necessary to complete the work, or necessary for the full and ample protection of the Owner, then the Contractor may reduce the percentage retained to an amount sufficient for the Owner's proper protection, as approved by the Architect. Should the Architect, at a later date, consider the amount withheld insufficient to protect the interest of the Owner, the Architect may increase the retained percentage to an amount not to exceed ten percent, or five percent, dependent upon the stage or percentage of contract completion.

§ 9.3.1.5 Pursuant to Section 8.3.4, a dispute based upon increased costs claimed by one Prime Contractor occasioned by delays or other actions of another Prime Contractor may not be brought against the Owner. Should a Prime Contractor still attempt to bring such a claim against the Owner, additional retainage in the sum of one and one-half times the amount of any possible liability may be withheld from the parties directly involved until such time as final resolution is agreed to by all parties directly or indirectly involved unless the Contractor attempting to initiate the claim against the Owner furnishes a bond satisfactory to the Owner to indemnify the Owner against the claim.

§ 9.3.1.6 The Architect/Engineer shall make final inspection within 30 days of receipt of the Contractor's written request for final inspection. If the work is substantially completed, the Architect/Engineer shall issue

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a Certificate of Substantial Completion. As per Section 9.10, regarding Contractor's initial Application for Final Payment, the Architect/Engineer shall issue a Certificate for Payment, less one and one-half times the amount required to complete any then remaining, uncompleted, punch list items, which amount shall be certified by the Architect/Engineer and upon receipt by the Owner of any guarantee bonds which may be required, in accord with the Contract Documents, to insure proper workmanship for a designated period of time, the Owner shall make payment within 45 days thereafter. The certificate given by the Architect/Engineer shall list each uncompleted item and a reasonable cost of completion. Final payment of any amount withheld for the completion of the minor items shall be paid upon completion of the items with submission of the Final Application for Payment in accordance with Section 9.10. Any amounts withheld under this Paragraph are in addition to any amounts withheld under Paragraph 9.3.1.5.

§ 9.3.1.7 The cost of preparation of shop drawings and related information shall not be included in submission for payment until substantial quantities of materials are on the project site.

§ 9.3.2 Materials in reasonable quantities, which are delivered to the site, properly stored, and accepted for incorporation in the work but not yet so used, may be included on Monthly Estimates for Payment. The Contractor shall submit with the Monthly Estimate reflecting the unincorporated material the following:

- **.1 The original and five copies of itemized, paid invoices showing payment of such material by the Contractor and delivery slips certifying to the delivery of the quantities set forth on the estimate to the site of the work.**
- **.2 Payment for materials stored on the site shall be based on actual cost for same as shown by the receipted invoices and shall not exceed the cost of materials as indicated on the reviewed Detailed Cost Breakdown for the particular items involved.**
- **.3 The receipted invoices shall have each item identified and marked with the Contractor's corresponding itemized breakdown number.**
- **.4 Provide Insurance Certificates in the full amount of the materials against theft, loss from any other cause, damage, destruction and/or such other risks as may be involved, which would render the aforesaid materials unfit or unavailable for incorporation in the work.**
- **.5 Statement from the Contractor's Surety Company acknowledging stored materials are being paid and there is no objection.**
- **.6 Request for payment for materials stored off site, in addition to the above requirements, shall include a statement identifying the location of said materials. The Owner and the Architect, or their representatives, shall have full access to the location of said materials.**
- **.7 The Contractor shall mark or identify such materials as being the property of the Owner and shall be solely responsible for their safe keeping and usability at the time it is to be incorporated in the work and shall at his own expense care for and protect the same.**
- **.8 The Contractor shall submit the "Contractor's Request for Stored Material Payment" form, included following these General Conditions, with each request for stored material payment. Failure to submit the form and verification attachments will result in denial of the request.**
- **.9 "Stored Materials" shall be defined as fabricated, primed, and ready for installation.**

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of

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the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

- **.1 The Owner shall have no responsibility or liability for interest on late payments pursuant to the Public Works Regulation Law.**

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a

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similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

.1 The Owner's receipt of an Occupancy Permit does not constitute "Completion" of the work by the Contractor. To reach "Completion", the Project must have all work complete, there shall be no missing or incomplete items or temporary items on both the building/structure and site.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the

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Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of **Final Payment of the Entire Project** .

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Contractor shall complete any portion or portions of the work in such order as may be stated in the Contract Documents. All work shall be so arranged and Contractors shall so coordinate their work as to complete the work by the date set forth in the Contract. See Section 011000. The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.9.4. The Contractor shall secure and pay all costs required for all necessary permits, licenses, approvals or certificates required for occupancy or completion of construction as issued or required by any agency having jurisdiction thereof.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 The Contractor, when the work is considered complete, shall submit to the Architect a written certification that:

- **.1 Contract Documents have been reviewed.**
- **.2 Work has been inspected and completed in accordance with the Contract Documents.**
- **.3 Equipment and systems have been tested and operated in the presence of the Owner's representative.**
- **.4 Work is completed and ready for final review.**
- **.5 Request that the Architect make a review to verify the status of completion with reasonable promptness after receipt of such request.**

§ 9.10.2 Should the Architect consider that the work is incomplete or defective:

- **.1 The Architect will notify the Contractor in writing listing the incomplete or defective work.**

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.2 The Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the Architect that the work is complete.
.3 The Architect will again review the work.

§ 9.10.3 Should the Architect perform more than one review to those listed above due to failure of the work to comply with the claims of status of completion made by the Contractor, and/or additional services more than 60 days beyond the specified completion date for the Project, due to failure of the work to comply with the Contract Documents:

.1 The Owner will compensate the Architect for such additional services.
.2 The Owner will deduct the amount of such compensation from the final payment to the Contractor.

§ 9.10.4 Following Substantial Completion, in the event the Contractor or its subcontractor fails to complete the list of items of the work instructed by the Architect to be corrected or completed within 30 days after the date of Substantial Completion, the Owner may (I) exercise any available remedies to correct or complete deficient work or retain a third party to correct or complete such work at the cost of the defaulting contractor, and (II) retain and deduct from any payments or retention otherwise due to the defaulting contractor any fees and expenses for services required to be provided by the Architect more than 30 days after the specified Completion Date.

§ 9.10.5 When the Architect finds that the work is acceptable under the Contract Documents, the Architect shall request the Contractor to make closeout Submittals:

.1 Evidence of compliance with requirements of governing authorities.
.2 Bound and indexed Operation and Maintenance Manuals, including all extended Warranties issued by Contractors and/or manufacturers.
.3 Record Drawings incorporating As-Built Revisions to drawings and/or specifications, including change orders.
.4 Contractor's Affidavit of Payment of Debts and Claims, A.I.A. Document G706.
.5 Contractor's Affidavit of Release of Liens, A.I.A. Document G706A.
.6 Consent of Surety Company to Final Payment, A.I.A. Document G707, with effectively dated powers of attorney attached.
.7 Application and Certification for Final Payment, A.I.A. Documents G702 and G703.

§ 9.10.6 Final payment shall be based upon full completion of the Project. The final payment shall not be due and payable until the Contractor's satisfactory completion of the requirements listed under final review above. Final payment to the Contractor shall not relieve any Surety of its obligation to the Owner as set forth in the Surety Bonds

§ 9.10.7 Where one or more claims against the Contractor, which are in controversy appear unsatisfied, the Architect shall have the discretion to direct final payment to be made, or a partial payment to be made from the monies due, should it be determined that the withholding of the entire final payment would work a hardship on the Contractor or delay the final payments required under this paragraph. The Contractor shall itemize the claims which remain unsatisfied, giving the reason therefore, and the statements of the Surety Companies shall provide that the final payment, or partial payment, as the case may be, shall not relieve any Surety of any obligations to the Owner as set forth in the Surety Bonds. If only partial payment is permitted under this paragraph, the final payment shall not be made until the Contractor shall have furnished satisfactory evidence and a statement from the Surety that all claims against the Contractor have been paid and that payment to the Contractor of the Contract balance shall not relieve the Surety of any of its obligations to the Owner as provided in the Surety's Bond.

§ 9.10.8 The acceptance by the Contractor of the final payment shall be and shall operate as a release to the Owner and every member and agent thereof from all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, shall operate to release the Contractor or the Contractor's Sureties from any obligations under this Contract or the Performance and Payment Bond.

§ 9.10.9 Final Completion liquidated damages, as specified in Section 002000, shall begin to be assessed on the Final Project Completion Dates as specified in Section 011000. The definition of 'Final Project Closeout Completion' shall be the state when the Project should be completely closed out to receive Final Payment as specified above in Paragraph 9.10.6.

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ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.1.2 The Contractor shall comply with the Federal Occupational Safety & Health Act (OSHA) of 1970 and perform associated recording and reporting requirements.
§ 10.1.2.1 The presence of lead based paint may exist at the site. It is the contractor's responsibility to perform his work in accordance with OSHA Regulations CFR 1926.62.

§ 10.1.3 The Contractor shall not install any known product or materials, as currently defined by current State and Federal regulations, in the execution of the Contract which might have a harmful, hazardous or toxic affect upon tradespersons working on the Project, or upon any other occupants or future occupants of the building, regardless of materials approved for use or specified.

§ 10.1.4 Any hazardous materials brought to the workplace for use during the construction of the project shall be identified by Material Safety Data Sheets which shall be turned over to the Owner's Representative. **Full responsibility and liability for storage and use of such hazardous materials shall be with the Contractor bringing such materials onto the project site.**

§ 10.1.5 The Contractor shall submit certified letters to the Owner that there is no asbestos, lead or toxic substance in any materials installed on the project.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose

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duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

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In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

.1 **In an emergency situation, all NESHAP regulations published on November 20, 1990, will be followed. Violators of the NESHAP regulations will be subject to significant fines and enforcement action from EPA, as well as the applicable State or Local air agencies.**

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in **Section 007316 – Insurance Requirements**. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.1.1 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by **Section 007316 – Insurance Requirements**. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§11.1.2.1 Certificates of bonds acceptable to the Owner shall be filed with the Owner prior to commencement of the Work.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§11.1.4.1 The Contractor's Insurance Company shall provide written notification to the Owner and Architect a minimum of 30 days prior to any cancellation of any required insurance.

§ 11.2 Owner's Insurance

§ 11.2.1 See paragraph 11.4.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or

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adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents,

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the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

§ 13.1.1 The Contract shall be governed by the law of the place where the Project is located.

§ 13.1.1.1 The following laws and/or acts shall be incorporated in the Contract:

a. PENNSYLVANIA PREVAILING WAGE RATES (Act No. 442 of 1961, P.L. 987, amended by Act 342 of 1963, P.L. 653): This regulation and the general prevailing minimum wage rates, as determined by the Secretary of the Pennsylvania Department of Labor and Industry, Bureau of Labor Law Compliance for Prevailing Minimum Wage Predeterminations (hereafter referred to as "the Secretary"), which shall be paid for each craft or classification of all workers needed to perform the Contract during the anticipated term thereof in the locality in which public work is performed, are made part of this Contract.

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

2) Workmen shall be paid no less than such general prevailing minimum wages and such other provisions to assure payment thereof as heretofore set forth.

3) These provisions shall apply to all work performed on the Contract by the Contractor and to all work performed on the Contract by all Subcontractors.

4) The Contractor shall insert in each of the Contractor's Subcontracts all of the provisions contained in these required provisions and such other stipulations as may be required.

5) No workmen may be employed on the Project except in accordance with the classifications set forth in the decisions of the Secretary. In the event that additional or different

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classifications are necessary the procedure set forth in Section 7 of the Regulations shall be followed.

6) **All workmen employed or working on the Project shall be paid unconditionally, regardless of whether any contractual relationship exists or the nature of any Contractor, Subcontractor and workmen, not less than once a week without deduction or rebate, on any account, either directly or indirectly, except authorized deductions, the full amount due at the time of payment, computed at the rate applicable to the time worked in the appropriate classification. Nothing in the Contract, the Act or the Regulations shall prohibit the payment of more than the general prevailing wage rates as determined by the Secretary to any workmen on the Project.**

7) **The Contractor and each Subcontractor shall post for the entire period of construction the wage determination 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:**
   a) **Name of Project.**
   b) **Name of Owner.**
   c) **The crafts and classifications of workmen listed in the Secretary's general prevailing minimum wage rate determinations for the particular project.**
   d) **The general prevailing minimum wage rates determined for each craft and classification and the effective date of any change.**
   e) **A statement advising workmen that if they have been paid less than the prevailing minimum wage rate for their job classification or that the Contractor and/or Subcontractor are not complying with the Act or the Regulations in any manner whatsoever they may file a protest with the Secretary of Labor and Industry. 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 six months from the occurrence of the event creating such right.**

8) **The Contractor and 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 Project 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 reviewed of the Owner and to the Secretary or his duly authorized representative. Weekly payroll certifications shall be submitted, to the Owner, on Form LLC-25, copy included following these General Conditions.**

9) **Apprentices shall be limited to the 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 No. 304) and the Rules and Regulations issued pursuant thereto shall be employed on the Project. Any workman using the tools of a craft who does not qualify as an apprentice within the provision of this subsection shall be paid the rate predetermined for journeymen in that particular craft and/or classification.**

10) **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.**

11) **Payment of compensation to workmen for work performed on the Project on a lump sum basis, or a piece work system, or a price certain for the 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.**

12) **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 Owner, under oath, and in form satisfactory to the Secretary, certifying that all workmen have been paid wages in strict conformity with the provisions if any wages remain unpaid to set forth the amount of wages due and owing to each workman respectively.**

b. **COMPETENT WORKMEN: No workmen shall be regarded as competent first class, within the meaning of this Act, except those who are duly skilled in their respective branches of labor, and who shall be paid not less than such rates of wages and for such hours work as shall be**

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established and current rates of wages paid for such hours by employers of organized labor in doing similar work in the district where work is being done.

c. DISCRIMINATION PROHIBITED: According to 62 Pa. C.S.A. § 3701, the Contractor agrees that:

1) In the hiring of employees for the performance of work under the contract or any sub-contract, no contractor, sub-contractor, or any person acting on behalf of the contractor or sub-contractor shall by reason of gender, race, creed or color discriminate against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.

2) No contractor or sub-contractor or any person on their behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under the contract on account of gender, race, creed or color.

3) The contract may be canceled or terminated by the government agency, and all money due or to become due under the contract may be forfeited for a violation of the terms or conditions of that portion of the contract.

d. HUMAN RELATIONS ACT: The provisions of the Pennsylvania Human Relations Act, Act 222 of October 27, 1955 (P.L. 744) (43 P.S., Section 951, et seq.) of the Commonwealth of Pennsylvania prohibit discrimination because of race, color, religious creed, ancestry, age, sex, national origin, handicap or disability, by employers, employment agencies, labor organizations, contractors, and others. The Contractor shall agree to comply with the provisions of this Act as amended that is made part of this specification. Your attention is directed to the language of the Commonwealth's non-discrimination clause in 16 Pa. Code 49.101.

e. PROVISION FOR THE USE OF STEEL AND STEEL PRODUCTS MADE IN THE U.S.:

1) In accordance with Act 3 of the 1978 General Assembly of the Commonwealth of Pennsylvania, if any steel or steel products are to be used or supplied in the performance of the Contract, only those produced in the United States as defined therein shall be used or supplied in the performance of the Contract or any Subcontracts thereunder.

2) In accordance with Act 161 of 1982, cast iron products shall also be included and produced in the United States.

3) Act 144 of 1984 further defines "steel products" to include machinery and equipment. The act also provides clarifications and penalties.

f. POLLUTION CONTROL - PRESERVATION OF NATURAL RESOURCES:

1) In compliance with Act No. 247 of the 1972 Session of General Assembly of the Commonwealth of Pennsylvania, a list of Federal and/or State statutes, rules or regulations dealing with the prevention of environmental pollution and preservation of public natural resources that may affect the Specifications are found in Section 007353. The Contractor shall fully comply with the latest revisions of said Acts and shall ensure compliance by all of the Contractor's Subcontractors.

2) All demolition and construction waste materials and/or rubbish shall be disposed of off the project site. All demolition and construction waste materials and/or rubbish shall be disposed of in accordance with the latest Pennsylvania Solid Waste Laws at an approved facility.

3) Contractors shall maintain a plan for soil erosion control acceptable to the Pennsylvania Department of Environmental Protection on the Project Site at all times and shall be responsible for complying with all laws, regulations and guidelines of the Department.

g. As specified in Section 002000, all contractors and subcontractors shall verify their employees are authorized to work in the United States (requires verification of citizenship or lawful immigration status), utilizing the U.S. Department of Homeland Security's E-Verify internet program. Contractors' forms shall be submitted within the time period specified in Section 002000; all subcontractors' forms shall be submitted prior to performing work on site.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Except as specifically provided elsewhere in the Contract Documents, the Owner's, Architect's and Owner's Representative's duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

The Owner shall have no responsibility or liability for interest on late payments pursuant to the Public Works Regulation Law, as stated in Article 9, Paragraph 9.6.1.1.

§ 13.6 USE OF STANDARD A.I.A. DOCUMENTS

§ 13.6.1 In addition to standard A.I.A. Documents required for submission under other procedures noted herein and/or additional A.I.A . standard Documents to be utilized on this Project are as follows:

Standard Form of Agreement Between Owner and Contractor, Document A101

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Bid Bond, Document A310
Performance Bond and Labor and Material Payment Bond, Document A312 with Section 6 amended as recommended by the A.I.A.
Change Order, Document G701
Application and Certificate for Payment, Document G702 and G703
Certificate of Substantial Completion, Document G704
Maintenance Bond in accord with Document G704
Supplemental Attachment for Acord Certificate of Insurance 25-S, Document G715
Contractor's Affidavit of Payment of Debts and Claims, Document G706
Contractor's Affidavit of Release of Liens, Document G706A
Consent of Surety Company to Final Payment, Document G707
Consent of Surety to Reduction In or Partial Release of Retainage, Document G707A

§ 13.6.2 A.I.A. Documents may be obtained from the American Institute of Architects, Pittsburgh Chapter, 925 Liberty Avenue, Suite 700, Pittsburgh, Pennsylvania 15222, (412) 471-9548; aiapgh.org/aia-documents/. Unless otherwise specified all documents shall be the latest edition.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

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§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. **Claims must be initiated by written notice.** The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated

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damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Contractor shall commence all Claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the **Owner** arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement and within the period specified by applicable law,. The Contractor waives all Claims and causes of action not commenced in accordance with this Section 15.1.2.

.1 There are no statute of limitations on claims by the Owner against the Contractor.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.3.3 Failure to timely initiate a claim, in writing, shall constitute waiver of such claim. A statement at a meeting, a change order request or correspondence that does not strictly comply with the notice of claim provisions shall not constitute sufficient or timely notice of a claim.

§ 15.1.3.4 The written notice shall contain the following information and shall be verified under penalty of perjury by a person with authority to act on behalf of the Contractor that the facts and information contained in or relied upon in the notice is true and correct.

- **.1 The date that the event giving rise to the claim commenced and the date upon which it was first recognized by the contractor.**
- **.2 The cause of the event giving rise to the claim.**
- **.3 The effect of the event giving rise to the claim on the construction progress including the identity of all elements of work that have been and will be impacted by the event and a specific explanation as to why and to what extent such work has been or will be impacted by the event giving rise to the claim.**
- **.4 If the event giving rise to the claim has impacted the schedule, a proposal for schedule recovery from the event that impacted the schedule that shall include a description of the means by which the Contractor intends to prevent further delay in the work.**

§ 15.1.3.5 If the Contractor is claiming additional costs for delay, interference or inefficiency and the Contractor's notice of claim for delay, interference or inefficiency is timely submitted to the Architect pursuant to section 15.1.3, the Contractor shall submit a weekly Status Report until recovery from the delay, interference or inefficiency has been achieved. The Status Report shall be in writing and accompanied by an Affidavit subject to the penalty of perjury. The Status Report shall:

- **.1 Explain the efforts taken to recover from the delay, interference or inefficiency.**
- **.2 Identify the cause of any continuation of the delay, interference or inefficiency or any hindrance to the Contractor's proposed recovery plan.**
- **.3 Include a breakdown of the costs resulting from the delay, interference or inefficiency for any and all costs for which it is making a claim, attaching cost reports, certified payroll and invoices that support the costs.**
- **.4 The final Status Report shall identify the date that recovery from the delay, interference or inefficiency was achieved.**

§ 15.1.3.6 As a part of the Contractor's initial notification and status updates thereafter, the Contractor shall include in the information submitted with its claim, and any supplemental information provided, a detailed description of the specific reason that caused the additional damages requested and shall also fully

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identify any other causes, including inefficiencies caused by, other contractors, its own forces, or those of its subcontractors. The Contractor shall provide scheduling information that shows the critical impact to the schedule at the time it first provides notice and the impact anticipated at that time for future work. As a part of its status update of information required to support its request, the Contractor will provide a regular update of the schedule analysis showing continued critical impact on a monthly basis, showing both the impact that occurred as of that update and the continued anticipated impact for future work from the date of update. The Contractor acknowledges that the impact of the inefficiency of each change order shall be identified at the time of a change order request, and that the Contractor shall make no claim for any inefficiency based on a cumulative impact of the change orders.

§ 15.1.3.7 Even though formulas or means of calculating damages other than the records described in this contract are expressly prohibited and are contrary to the terms of this Agreement, the Owner understands that courts may still permit the contractor to present damages for inefficiencies. Contractor agrees to the following with regard to any claim for inefficiency:

- **.1 Claims for inefficiencies must be made within the time requirements of this Article 15.1.3 herein or other applicable provision of this contract. To the extent the full amount of inefficiency cannot be determined, the Contractor must provide a proper notice of its first occurrence of inefficiency costs even if the full amount of the claim cannot be determined. The Contractor must provide monthly updates of the amounts of inefficiency it has incurred in the prior month, with full documentation and invoices for labor, supervision and other inefficiency costs.**
- **.2 To the extent the Contractor uses a "measured mile" approach, or any similar formula to calculate damages such as earned value or similar analysis, the Contractor will identify the unimpacted activity period at the time it first makes its claim. The Contractor acknowledges that the use of such methods for calculating inefficiency require the identification of a period unimpacted by inefficiency and that such unimpacted period must occur prior to the period of inefficiency for such a method to be valid.**
- **.3 The Contractor shall not pursue any change order or claim relying on the Eichley formula, Manshul formula or other similar formula in pursuing any overhead amounts, since these formulas do not calculate overhead amounts with any degree of reasonable certainty. The Contractor agrees that any amounts for overhead, including home office overhead, are included in the Contractor's mark-up for overhead and profit as described in this agreement.**

§ 15.1.3.8 Payment of a change order shall constitute accord and satisfaction of all claims in connection with the change or changes to the Contract addressed by the change order, and it is understood and agreed that a signed change order form shall be the complete and fully integrated agreement for all related costs and that there are no oral or written understandings, representations or agreements, directly or indirectly, connected with the Change Order that are not affirmatively stated on the signed Change Order form. The contractor's execution of a change order constitutes a representation that it will make no further claims for damages inconsistent with this paragraph.

§ 15.1.3.9 Strict compliance with the provisions of 15.1.3 and all of its subparts is a condition precedent to the presentation of any claim for delay, interference or inefficiency.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

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§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. **Refer to Article 8, Paragraph 8.3.** In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction. **Contractor must also provide documentation regarding the weather that the Contractor anticipated and the information upon which the Contractor based his anticipation of weather conditions.**

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. **It is understood and agreed that Contractor's waiver of consequential damages against the Owner shall extend to the benefit of the Architect, its owners, directors and employees, and the Architect's consultants.**

.3 The Contractor represents that its agreement to pursue costs, damages or claims in strict accordance with Article 15 herein or any other provision of the Contract is material to the award of the contract to the Contractor and that the Owner and Architect are entitled to rely upon this representation. The Contractor further agrees that this paragraph shall survive termination or rescission of this agreement even in the event of a material breach of contract by the Owner.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to litigation of any Claim. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

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§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties, but if the parties dispute **the initial decision, it may be subject to litigation as hereafter specified.**

§ 15.2.6 Either party may file for litigation of an initial decision at any time, subject to the terms of Sections 15.1.2 and 15.2.6.1.

§ 15.2.6.1 The Owner may, within 30 days from the date of receipt of an initial decision, demand in writing that the Contractor file litigation. If such a demand is made and the Contractor fails to file for litigation within 30 days after receipt thereof, then the Contractor waives its rights to commence litigation notwithstanding Section 15.1.2 of these General Conditions with respect to the initial decision. Litigation shall be before the Court of Common Pleas of Mercer County, PA.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

END OF SECTION

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DETAILED COST BREAKDOWN

40 Shenango Avenue, Sharon, PA 16146 Phone (724) 981-8820

130 7th Street, 201 Century Building, Pittsburgh, PA 15222 Phone (412) 281-2280

INSTRUCTIONS FOR USE

1. **Use as many first pages as required plus (1) second (signature) page.**

DETAILED COST BREAKDOWN

40 Shenango Avenue, Sharon, PA 16146
Voice (724) 981-8820

130 7th Street, Suite 201, Pittsburgh, PA 15222
Voice (412) 281-2280

Contractor's Name
Address 1
Address 2
City, State & Zip
Phone:
Fax:

HHSDR Architects / Engineers
Project Name:
HHSDR Project No.:
Contract.:
(General, Heating, Plumbing, Electric, Etc.)
Contractor's Job No.:

(A) Item No.	(B) Description	(C) Quantity	(D) Units	(E) Cost Per Unit = F + G	Division of Unit Cost		(H) Total Amount = C x E
					(F) Materials	(G) Labor, Etc.	
1	Description 1 (*Example*)	10	SF	$3.00	$1.00	$2.00	$30.00
2	Description 2 (*Example*)	15	EACH	$4.25	$3.13	$1.12	$63.75

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Contractor's Name
Address 1
Address 2
City, State & Zip
Phone:
Fax:

HHSDR Architects / Engineers
Project Name:
HHSDR Project No.:
Contract.:
(General, Heating, Plumbing, Electric, Etc.)
Contractor's Job No.:

(A) Item No.	(B) Description	(C) Quantity	(D) Units	(E) Cost Per Unit = F + G	Division of Unit Cost		(H) Total Amount = C x E
					(F) Materials	(G) Labor, Etc.	

TOTAL CONTRACT PRICE _____

I HEREBY CERTIFY THAT THE ABOVE IS AN ACCURATE BREAKDOWN OF CONSTRUCTION PRICES. I ALSO HEREBY ACKNOWLEDGE AND CONFIRM THAT THE ABOVE INFORMATION SHALL BE USED AS REFERENCED IN THE SPECIFICATIONS GENERAL CONDITIONS ARTICLE 7. THE CONTRACTOR IS RESPONSIBLE FOR ALL ACTUAL QUANTITIES REQUIRED FOR THE PROJECT.

Submitted
Contractor Date

Reviewed By
HHSDR ARCHITECTS / ENGINEERS Date

MATERIAL SOURCE OF SUPPLY AND SUB CONTRACTOR APPROVAL

40 Shenango Avenue, Sharon, PA 16146 Phone (724) 981-8820
130 7th Street, 201 Century Building, Pittsburgh, PA 15222 Phone (412) 281-2280

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MATERIAL SOURCE OF SUPPLY AND SUB-CONTRACTOR APPROVAL

40 Shenango Avenue, Sharon, PA 16146
Voice (724) 981-8820

130 7th Street, Suite 201, Pittsburgh, PA 15222
Voice (412) 281-2280

Contractor's Name
Address 1
Address 2
City, State & Zip
Phone:
Fax:

HHSDR Architects / Engineers

Project Name:
HHSDR Project No.:
Contract.:
(General, Heating, Plumbing, Electric, Etc.)
Contractor Job No.:

I propose to install the following items and/or I also propose to enter into a contract with the following Sub-Contractors, with the understanding that the Owner does not, in agreeing to such sub-contract, release me from any of the obligations of my contract with the Owner and that I assume all responsibility of such sub-contract.

Item No.	Spec. Number	Type of Material or Work	Check one		Name & Address of Mfg. or Sub-Contractor	For Architect's Use Only
			Mfg.	Sub-Contractor		

MATERIAL SOURCE OF SUPPLY AND SUB-CONTRACTOR APPROVAL

40 Shenango Avenue, Sharon, PA 16146
Voice (724) 981-8820 Fax (724) 981-4515

130 7th Street, Suite 201, Pittsburgh, PA 15222
Voice (412) 281-2280 Fax (412) 281-2334

Contractor's Name
Address 1
Address 2
City, State & Zip
Phone:
Fax:

HHSDR Architects / Engineers

Project Name:
HHSDR Project No.:
Contract.:
(General, Heating, Plumbing, Electric, Etc.)
Contractor Job No.:

I propose to install the following items and/or I also propose to enter into a contract with the following Sub-Contractors, with the understanding that the Owner does not, in agreeing to such sub-contract, release me from any of the obligations of my contract with the Owner and that I assume all responsibility of such sub-contract.

Item No.	Spec. Number	Type of Material or Work	Check one		Name & Address of Mfg. or Sub-Contractor	For Architect's Use Only
			Mfg.	Sub-Contractor		

Contractor's Signature

Date

Approved, HHSDR Architects & Engineers

Date

Condition #1 - Approved to meet contract requirements.
Condition #2 - The Source of Supply is acceptable subject to submission of samples and approval of same.
Condition #3 - Source of Supply is acceptable subject to submission and approval of shop drawings and/or catalog information.
Condition #4 - Item disapproved. Contractor shall resubmit request for these items in such a manner as to permit approval.
Condition #5 - Submit name of manufacturer.
Condition #6 - References shall be submitted by manufacturers or sub-contractors. If then found acceptable, the Contractor shall be notified by Architect in writing.

ASSIGNMENT OF RIGHTS
SALES/USE TAX REFUND

For value received, the undersigned, having authority to execute this assignment, does hereby assign and transfer to the **Name/Address of Owner**, all his, its or their rights to sales and use tax which may be refunded for the following project(s):

Contract Name/Project Name and Commission Number

The undersigned further agrees that he, it or they have not and will not file a claim for refund for any sales and/or use tax which is the subject of this assignment.

Dated: _____

_____
(Signature)

CORPORATE SEAL

_____
(Title)

_____
(Signature)

_____
(Title)

_____
(Business Name)

STATE OF)
) SS.
COUNTY OF)

On this, the ____ day of _____, 20___ before me _____,
(Notary Name)
the undersigned officer, personally appeared _____ known to me (or
(Company Official)
satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument,

and acknowledged that he/she executed the same for the purpose herein contained,

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

(Notary Signature)
My Commission Expires:

CONTRACTOR'S REQUEST FOR STORED MATERIAL PAYMENT

TO BE SUBMITTED ONLY AFTER PRIOR APPROVAL OF THE ARCHITECT

40 Shenango Avenue, Sharon, PA 16146
Voice (724) 981-8820

130 7th Street, Suite 201, Pittsburgh, PA 15222
Voice (412) 281-2280

Contractor's Name
Address 1
Address 2
City, State & Zip
Phone:
Fax:

HHSDR Architects / Engineers

Project Name:
HHSDR Project No.:
Contract for:
(General, Heating, Plumbing, Electric, Etc.)
Contractor Job No.:
Application No.:
Period to:

Item No.	Description	Quantity	Cost Per Unit	Value	Stored Location

Total: _____

Verification Attachments

_____ Paid Invoice for Requested Item(s).

_____ Insurance Certificates for Requested Item(s).

_____ Consent of Surety for Payment to Contractor for Requested Item(s).

I HEREBY CERTIFY THAT THE ABOVE IS AN ACCURATE LISTING OF MATERIAL COSTS AND STORAGE LOCATONS.

Submitted _____
Contractor Date

SUBCONTRACTOR/SUPPLIER PAYMENT CERTIFICATION
AND
WAIVER OF LIENS

Project Name _____
Project Address _____

HHSDR # _____

Contract Name and Number _____

Contractor Name _____
Contractor Address _____

Contractor Phone Number _____

The undersigned, having authority to execute this certification, does hereby attest that all subcontractors who have performed work and all suppliers who have provided equipment and/or materials for the above referenced Contract of the Project, have been paid the full amount to which they are entitled to date.

Furthermore, the undersigned waives and releases any right that Contractor, and any subcontractor, supplier, materialman, or laborer have or may have to file a Mechanic's Lien or any other lien for the work, material, labor, and/or supplies provided to date.

Date: _____

_____
(Signature)

CORPORATE SEAL (if Corporation)

_____
(Title)

_____
(Signature, if Partnership)

_____
(Title)

STATE OF)
) SS.
COUNTY OF)

On this, the ____ day of _____, 20___ before me _____,
(Notary Name)
the undersigned officer, personally appeared _____ known to me (or
(Company Official)
satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that he/she executed the same for the purpose herein contained,
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
(Notary Signature)
My Commission Expires:_____

WEEKLY PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

☐ Contractor or ☐ Subcontractor (Please check one) **ALL INFORMATION MUST BE COMPLETED**

CONTRACTOR ADDRESS	SUBCONTRACTOR ADDRESS	
PAYROLL NUMBER / WEEK ENDING DATE	PROJECT AND LOCATION PROJECT SERIAL # PROJECT #	

DEPARTMENT OF LABOR & INDUSTRY
COMMONWEALTH OF PENNSYLVANIA

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGE DIVISION
7TH & FORSTER STREETS
HARRISBURG, PA 17120
1-800-932-0665

EMPLOYEE NAME	APPR. RATE (%)	WORK CLASSIFICATION	DAY AND DATE / HOURS WORKED EACH DAY	S-TIME 0-TIME	BASE HOURLY RATE	TOTAL FRINGE BENEFITS (C=Cash) (FB=Contributions)*	TOTAL DEDUCTIONS	GROSS PAY FOR PREVAILING RATE JOB(S)	CHECK #
						C: FB:			
						C: FB:			
						C: FB:			
						C: FB:			
						C: FB:			

*SEE REVERSE SIDE

PAGE NUMBER _____ OF _____

THE NOTARIZATION MUST BE COMPLETED ON FIRST AND LAST SUBMISSIONS ONLY. ALL OTHER INFORMATION MUST BE COMPLETED WEEKLY.

*FRINGE BENEFITS EXPLANATION (FB): Bona fide benefits contribution, except those required by Federal or State Law (unemployment tax, workers' compensation, income taxes, etc.)

Please specify the type of benefits provided and contributions per hour:

1) Medical or hospital care _____
2) Pension or retirement _____
3) Life insurance _____
4) Disability _____
5) Vacation, holiday _____
6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

1. The undersigned, having executed a contract with _____
(AWARDING AGENCY, CONTRACTOR OR SUBCONTRACTOR)

_____ for the construction of the above-identified project, acknowledges that:

(a) The prevailing wage requirements and the predetermined rates are included in the aforesaid contract.

(b) Correction of any infractions of the aforesaid conditions is the contractor's or subcontractor's responsibility.

(c) It is the contractor's responsibility to include the Prevailing Wage requirements and the predetermined rates in any subcontract or lower tier subcontract for this project.

2. The undersigned certifies that:
   (a) Neither he nor his firm, nor any firm, corporation or partnership in which he or his firm has an interest is debarred by the Secretary of Labor and Industry pursuant to Section 11(e) of the PA Prevailing Wage Act, Act of August 15, 1961, P.L. 987 as amended, 43 P.S.§ 165-11(e).

   (b) No part of this contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation or partnership in which such subcontractor has an interest is debarred pursuant to the aforementioned statute.

3. The undersigned certifies that:
   (a) the legal name and the business address of the contractor or subcontractor are: _____
   _____

   (b) The undersigned is: ☐ a single proprietorship ☐ a corporation organized in the state of _____
   ☐ a partnership ☐ other organization (describe) _____

   (c) The name, title and address of the owner, partners or officers of the contractor/subcontractor are:

NAME	TITLE	ADDRESS

The willful falsification of any of the above statements may subject the contractor to civil or criminal prosecution, provided in the PA Prevailing Wage Act of August 15, 1961, P.L. 987, as amended, August 9, 1963, 43 P.S. § 165.1 through 165.17.

_____
(DATE)

_____
(SIGNATURE)

_____
(TITLE)

_____
SEAL

Taken, sworn and subscribed before me this _____ Day

of _____ A.D., _____

REQUEST FOR INFORMATION

RFI # _____ **Please type or print legibly**

TO: _____ **DATE:** _____

PROJECT: _____

LOCATION: _____

COMM. No. _____

FROM: _____ **SUBJECT:** _____

SPEC. REF. _____

DWG. REF. _____

QUESTION:

List all drawings, sections, details, and/or technical specifications associated with above question to illustrate that question can not be discerned from the Contract Documents: _____

Cite all trades/Contractors involved with work in question to illustrate that coordination of work has been conducted and work remains in question: _____

COPIES TO: _____ _____

REPLY

TO: _____ **ATTN:** _____

FROM: _____ **DATE:** _____

RESPONSE:

1. ☐ **YOU ARE AUTHORIZED TO PROCEED WITH THE WORK IDENTIFIED IN THE REPLY TO THIS RFI PROVIDED NO CHANGE IN THE CONTRACT AMOUNT OR COMPLETION DATES IS REQUIRED. IF THE REPLY WILL CAUSE AN IMPACT TO THE CONTRACT AMOUNT OR COMPLETION DATE, NOTIFY THE ARCHITECT PRIOR TO PROCEEDING.**
2. ☐ **DO NOT PROCEED WITH THIS WORK UNTIL YOUR COST PROPOSAL FOR THIS CHANGE HAS BEEN RECEIVED AND APPROVED.**

REPLY COPIES TO:

_____ _____

SECTION 007316 – INSURANCE REQUIREMENTS

The following constitute the Insurance Requirements formerly included in AIA Document A101-2017 Exhibit A, "Insurance and Bonds". The awarded Contractor's Contract – AIA Document A101-2017 "Standard Form of Agreement Between Owner and Contractor" shall provide for the following:

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth herein. The term General Conditions refers to AIA Document A201™–2017 (Section 007216 of the Specifications), General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Refer to Section A.3.3.2.1 for Contractor's responsibility to purchase and maintain property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and/or an Installation Floater Coverage sufficient to cover the total value of the entire Project on a replacement cost basis.

§ A.2.3.1.3 Upon Final Completion, the Owner shall maintain property insurance written for the total value of the Project.

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner and The Commonwealth of Pennsylvania as additional insureds on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

a. Contractor's insurances shall be maintained until final payment has been made as provided in Section 9.10 of AIA Document A201-2017 (Section 007216 of the Specifications).
b. Waivers of Subrogation: Refer to Section 11.3 of AIA Document A201-2017 (Section 007216 of the Specifications).

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor. The Contractor shall be responsible for any and all deductible amounts.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Commonwealth of Pennsylvania, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04. (Form versions 12 19 also acceptable).

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than:

- **a.** **For Contracts up to $1,000,000:** policy limits shall be not less than $500,000 ($500,000 each occurrence), $1,000,000 ($1,000,000 general aggregate), and $1,000,000 ($1,000,000 aggregate for products-completed operations hazard.
- **b.** **For Contracts over $1,000,000 and up to $2,000,000:** policy limits shall be not less than $1,000,000 ($1,000,000 each occurrence), $2,000,000 ($2,000,000 general aggregate), and $2,000,000 ($2,000,000 aggregate for products-completed operations hazard.
- **c.** **For Contracts over $2,000,000 and up to $5,000,000:** policy limits shall be not less than $5,000,000 ($5,000,000 each occurrence), $7,000,000 ($7,000,000 general aggregate), and $7,000,000 ($7,000,000 aggregate for products-completed operations hazard.
- d. The limits can be met by combination of General Liability and Umbrella Liability policies.
- e. The policy shall provide coverage for claims including
  - **.1** damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
  - **.2** personal injury and advertising injury;
  - **.3** damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
  - **.4** bodily injury or property damage arising out of completed operations; and
  - **.5** the Contractor's indemnity obligations under Section 3.18 of the General Conditions (Section 007216 of the Specifications).

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- **.1** Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- **.2** Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- **.3** Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions (Section 007216 of the Specifications) arising out of injury to employees of the insured.
.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
.8 Claims related to roofing, if the Work involves roofing.
.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
.10 Claims related to earth subsidence or movement, where the Work involves such hazards.
.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than $1,000,000 per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than $1,000,000 each accident, $1,000,000 each employee, and $1,000,000 policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than $1,000,000 per claim and $1,000,000 in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than $1,000,000 per claim and$1,000,000 in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than $1,000,000 per claim and $1,000,000 in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than $1,000,000 per claim and $1,000,000 in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than$1,000,000 per claim and $1,000,000 in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until final payment has been made as provided in Section 9.10 of AIA Document A201-2017 (Section 007216 of the Specifications). Insurances shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

§ A.3.3.2.1 Property Insurance:

a. **The General Contractor** shall provide Property Insurance written on a Builder's Risk "All-Risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others under the contract, comprising total value of the contract for the Project at the site on a replacement cost basis without optional deductibles. Property insurance shall include, without limitation, insurance against the perils of fire (with extended coverage), explosion, and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, to building systems from testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. The Owner shall be an additional insured.
b. **All other Prime Contractor(s)** shall provide an Installation Floater covering the replacement value of property installed, fabricated or erected. Coverage shall remain in force until the installation work is accepted by the Owner or when the insured's interest in the property installed ceases. The Owner shall be an additional insured on the installation floater. Installation floater shall be in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications.
c. The Builder's Risk Property Insurance and all Installation Floater Coverages shall provide for: Material purchased by the Contractor and paid for by the Owner and stored but not installed on the job, or stored off the site shall be insured by the Contractor to include the Owner's interest with a Certificate furnished, prior to the payment of the materials.
d. Certificates of Insurances shall be issued in duplicate.

§ A.3.3.2.2 Insurance for physical damage to property while it is in storage (on and off the site) and in transit to the construction site on an "all-risks" completed value form.

§ A.3.3.2.3 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

§ A.3.3.2.4 Umbrella Liability Insurance (to sit as excess of General Liability, Auto Liability, and Employer's Liability), with policy limits of not less than $2,000,000 per claim and $2,000,000 in the aggregate.

§ A.3.3.2.5 Railroad Protective Liability Insurance, with policy limits of not less than $2,000,000 per claim and $6,000,000 in the aggregate, for Work within fifty (50) feet of railroad property.

§ A.3.4 Performance Bond and Payment Bond

§ A.3.4.1 The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located and as approved by the Commonwealth's Department of Insurance to do business in Pennsylvania, as follows:

Type	Penal Sum ($0.00)
Payment Bond (Labor & Material)	100% of Contract Amount
Performance Bond	100% of Contract Amount

§ A.3.4.2 Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

§ A.3.4.3 Certificates of Bonds shall be issued in duplicate, prior to commencement of the work.

§ A.3.4.4 100% Performance & Payment Bonds.

§ A.3.5 MAINTENANCE BOND

§ A.3.5.1 The Contractor shall provide a Maintenance Bond providing additional coverage in the full amount of the Contract (100% of the Contract Amount) assuring against defective or inferior materials or workmanship which may develop during the period of one year from the date of final payment.

§ A.3.5.2 Final completion date(s) shall be established for the Project when completed. The date of final payment shall establish Bond and Warranty periods for all work completed in each designated portion, notwithstanding the phased construction and the resulting beneficial usage by the Owner prior to the final acceptance.

§ A.3.5.3 Certificates of Bonds shall be issued in duplicate, prior to commencement of the work.

END OF SECTION 007316

SECTION 007343 - PREVAILING MINIMUM WAGE DETERMINATION RATES

MERCER COUNTY AGRICULTURAL AND
CONSERVATION COMMUNITY
LEARNING CENTER AT
MUNNELL RUN FARM
41 MUNNELL RUN LANE
MERCER, PA 16137

FOR THE
MERCER COUNTY COMMISSIONERS
125 SOUTH DIAMOND STREET
MERCER, PA 16137
HHSDR #4826

The wage rates, included herewith, are as issued by the PA Department of Labor and Industry, Bureau of Labor Law Compliance for Prevailing Minimum Wage Predeterminations. Any questions pertaining to wage rates should be addressed to the Bureau, reference the Project Name, Serial Number and County as stated on the following wage rates. The Bureau may be reached on-line at www.dli.pa.gov or toll free phone at 1-800-932-0665.

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project Name:	Mercer County Agricultural and Conservation Community Learning Center at Munnell Run Farm
General Description:	Complete interior and exterior renovations to 2 existing buildings. Site excavation and concrete sidewalks, utility trenching. 4 Prime Contracts - GC, HC, PC, & EC
Project Locality	Mercer
Awarding Agency:	Mercer County Board of Commissioners
Contract Award Date:	7/9/2026
Serial Number:	26-05268
Project Classification:	Building/Heavy/Highway
Determination Date:	5/29/2026
Assigned Field Office:	Pittsburgh
Field Office Phone Number:	(412)565-5300
Toll Free Phone Number:	(877)504-8354
Project County:	Mercer County

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 26-05268 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2024		$41.36	$29.51	$70.87
Asbestos & Insulation Workers	8/1/2025		$43.06	$30.31	$73.37
Boilermakers	6/1/2016		$40.90	$27.61	$68.51
Bricklayer	6/1/2025		$39.25	$25.62	$64.87
Bricklayer	12/1/2025		$39.75	$26.12	$65.87
Bricklayer	6/1/2026		$40.40	$26.47	$66.87
Carpenter	6/1/2024		$37.20	$19.92	$57.12
Carpenters - Piledriver/Welder	1/1/2025		$43.38	$22.72	$66.10
Carpenters - Piledriver/Welder	1/1/2026		$44.63	$23.47	$68.10
Carpenters	6/1/2025		$38.33	$20.52	$58.85
Cement Masons	7/1/2024		$34.57	$25.09	$59.66
Cement Masons	6/1/2025		$35.52	$25.64	$61.16
Drywall Finisher	1/1/2025		$34.01	$24.63	$58.64
Drywall Finisher	6/1/2025		$35.16	$25.98	$61.14
Electricians	12/29/2025		$51.45	$30.17	$81.62
Electricians	12/28/2026		$53.95	$30.94	$84.89
Electricians	12/27/2027		$56.55	$31.75	$88.30
Elevator Constructor	1/1/2025		$61.07	$40.05	$101.12
Elevator Constructor	1/1/2026		$63.71	$40.89	$104.60
Glazier	6/1/2013		$25.56	$13.98	$39.54
Iron Workers	6/1/2024		$34.83	$27.87	$62.70
Iron Workers	6/1/2025		$36.26	$28.64	$64.90
Iron Workers	6/1/2026		$37.76	$29.35	$67.11
Laborers (Class 01 - See notes)	1/1/2025		$27.32	$19.96	$47.28
Laborers (Class 01 - See notes)	1/1/2026		$27.82	$20.46	$48.28
Laborers (Class 02 - See notes)	1/1/2025		$27.47	$19.96	$47.43
Laborers (Class 02 - See notes)	1/1/2026		$27.97	$20.46	$48.43
Laborers (Class 03 - See notes)	1/1/2025		$30.47	$19.96	$50.43
Laborers (Class 03 - See notes)	1/1/2026		$30.97	$20.46	$51.43
Laborers (Class 04 - See notes)	1/1/2021		$23.57	$19.32	$42.89
Landscape Laborer (Skilled)	1/1/2025		$25.79	$18.78	$44.57
Landscape Laborer (Skilled)	1/1/2026		$26.79	$19.03	$45.82
Landscape Laborer (Tractor Operator)	1/1/2025		$26.09	$18.78	$44.87
Landscape Laborer (Tractor Operator)	1/1/2026		$27.09	$19.03	$46.12
Landscape Laborer	1/1/2025		$25.37	$18.78	$44.15
Landscape Laborer	1/1/2026		$26.37	$19.03	$45.40
Millwright	6/1/2020		$41.68	$20.32	$62.00
Operators (Class 01 - see notes)	6/1/2025		$42.72	$24.79	$67.51
Operators (Class 01 - see notes)	6/1/2026		$43.74	$25.29	$69.03
Operators (Class 02 -see notes)	6/1/2025		$36.67	$24.79	$61.46
Operators (Class 02 -see notes)	6/1/2026		$37.67	$25.29	$62.96
Operators (Class 03 - See notes)	6/1/2025		$33.88	$24.79	$58.67
Operators (Class 03 - See notes)	6/1/2026		$34.88	$25.29	$60.17
Painters Class 6 (see notes)	6/1/2024		$32.14	$24.93	$57.07

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 26-05268 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Painters Class 6 (see notes)	6/1/2025		$34.16	$25.81	$59.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		$62.82	$22.72	$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		$64.70	$23.47	$88.17
Piledrivers	1/1/2025		$41.88	$22.72	$64.60
Piledrivers	1/1/2026		$43.13	$23.47	$66.60
Plasterers	6/1/2024		$33.14	$21.04	$54.18
plumber	6/1/2025		$53.28	$25.87	$79.15
plumber	6/1/2026		$56.38	$25.87	$82.25
plumber	6/1/2027		$59.48	$25.87	$85.35
Pointers, Caulkers, Cleaners	6/1/2025		$40.66	$21.99	$62.65
Pointers, Caulkers, Cleaners	12/1/2025		$41.50	$22.50	$64.00
Pointers, Caulkers, Cleaners	6/1/2026		$42.20	$22.80	$65.00
Roofers	4/1/2024		$29.81	$19.04	$48.85
Roofers	4/1/2025		$30.31	$19.04	$49.35
Sheet Metal Workers	6/1/2024		$36.89	$29.32	$66.21
Sheet Metal Workers	6/1/2025		$38.36	$30.10	$68.46
Sign Makers and Hangars	7/15/2024		$32.32	$25.82	$58.14
Sign Makers and Hangars	7/15/2025		$33.48	$26.41	$59.89
Sprinklerfitters	4/1/2025		$49.75	$29.21	$78.96
Sprinklerfitters	4/1/2026		$52.82	$30.56	$83.38
Steamfitters	6/1/2024		$48.15	$29.57	$77.72
Steamfitters	6/1/2025		$50.20	$31.02	$81.22
Stone Masons	12/1/2022		$38.56	$23.61	$62.17
Terrazzo Finisher	12/1/2025		$42.75	$19.51	$62.26
Terrazzo Finisher	6/1/2026		$43.82	$19.94	$63.76
Terrazzo Mechanics	12/1/2025		$42.15	$21.76	$63.91
Terrazzo Mechanics	6/1/2026		$43.22	$22.19	$65.41
Tile Finisher	12/1/2025		$33.99	$18.71	$52.70
Tile Finisher	6/1/2026		$34.82	$18.98	$53.80
Tile Setter	12/1/2025		$40.80	$23.25	$64.05
Tile Setter	6/1/2026		$41.66	$23.49	$65.15
Truckdriver class 1(see notes)	1/1/2025		$36.43	$23.21	$59.64
Truckdriver class 1(see notes)	1/1/2026		$37.93	$23.71	$61.64
Truckdriver class 2 (see notes)	1/1/2025		$36.89	$23.52	$60.41
Truckdriver class 2 (see notes)	1/1/2026		$38.39	$24.02	$62.41
Window Film / Tint Installer	6/1/2019		$24.52	$12.08	$36.60

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 26-05268 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2025		$41.35	$22.09	$63.44
Carpenter	1/1/2026		$42.60	$22.84	$65.44
Carpenter Welder	1/1/2025		$42.85	$22.09	$64.94
Carpenter Welder	1/1/2026		$44.10	$22.84	$66.94
Carpenters - Piledriver/Welder	1/1/2025		$43.38	$22.72	$66.10
Carpenters - Piledriver/Welder	1/1/2026		$44.63	$23.47	$68.10
Cement Finishers	1/1/2024		$35.14	$26.30	$61.44
Cement Finishers	1/1/2025		$35.94	$27.50	$63.44
Cement Masons	1/1/2020		$32.84	$21.10	$53.94
Electric Lineman	9/2/2024		$66.56	$30.17	$96.73
Electric Lineman	9/1/2025		$68.06	$32.29	$100.35
Iron Workers	6/1/2024		$34.83	$27.87	$62.70
Iron Workers	6/1/2025		$36.26	$28.64	$64.90
Laborers (Class 01 - See notes)	1/1/2025		$33.70	$26.00	$59.70
Laborers (Class 01 - See notes)	1/1/2026		$34.70	$27.00	$61.70
Laborers (Class 02 - See notes)	1/1/2025		$33.86	$26.00	$59.86
Laborers (Class 02 - See notes)	1/1/2026		$34.86	$27.00	$61.86
Laborers (Class 03 - See notes)	1/1/2025		$34.25	$26.00	$60.25
Laborers (Class 03 - See notes)	1/1/2026		$35.25	$27.00	$62.25
Laborers (Class 04 - See notes)	1/1/2025		$34.70	$26.00	$60.70
Laborers (Class 04 - See notes)	1/1/2026		$35.70	$27.00	$62.70
Laborers (Class 05 - See notes)	1/1/2025		$35.11	$26.00	$61.11
Laborers (Class 05 - See notes)	1/1/2026		$36.11	$27.00	$63.11
Laborers (Class 06 - See notes)	1/1/2025		$31.95	$26.00	$57.95
Laborers (Class 06 - See notes)	1/1/2026		$32.95	$27.00	$59.95
Laborers (Class 07 - See notes)	1/1/2025		$34.70	$26.00	$60.70
Laborers (Class 07 - See notes)	1/1/2026		$35.70	$27.00	$62.70
Laborers (Class 08 - See notes)	1/1/2025		$36.20	$26.00	$62.20
Laborers (Class 08 - See notes)	1/1/2026		$37.20	$27.00	$64.20
Millwright	6/1/2024		$47.59	$23.72	$71.31
Millwright	6/1/2025		$49.72	$23.72	$73.44
Operators (Class 01 - see notes)	1/1/2025		$40.39	$24.23	$64.62
Operators (Class 01 - see notes)	1/1/2026		$41.96	$24.66	$66.62
Operators (Class 02 -see notes)	1/1/2025		$40.13	$24.23	$64.36
Operators (Class 02 -see notes)	1/1/2026		$41.70	$24.66	$66.36
Operators (Class 03 - See notes)	1/1/2025		$36.48	$24.23	$60.71
Operators (Class 03 - See notes)	1/1/2026		$38.05	$24.66	$62.71
Operators (Class 04 - See notes)	1/1/2025		$36.02	$24.23	$60.25
Operators (Class 04 - See notes)	1/1/2026		$37.59	$24.66	$62.25
Operators (Class 05 - See notes)	1/1/2025		$35.77	$24.23	$60.00
Operators (Class 05 - See notes)	1/1/2026		$37.34	$24.66	$62.00
Operators Class 1-A	1/1/2025		$43.39	$24.23	$67.62
Operators Class 1-A	1/1/2026		$44.96	$24.66	$69.62
Operators Class 1-B	1/1/2025		$42.39	$24.23	$66.62

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 26-05268 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 1-B	1/1/2026		$43.96	$24.66	$68.62
Painters Class 2 (see notes)	6/1/2025		$40.36	$25.81	$66.17
Painters Class 3 (see notes)	6/1/2025		$43.68	$25.81	$69.49
Painters Class 4 (see notes)	6/1/2019		$28.20	$20.06	$48.26
Painters Class 5 (see notes)	6/1/2019		$22.91	$20.06	$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		$62.82	$22.72	$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		$64.70	$23.47	$88.17
Piledrivers	1/1/2025		$41.88	$22.72	$64.60
Piledrivers	1/1/2026		$43.13	$23.47	$66.60
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		$48.43	$40.28	$88.71
Truckdriver class 1(see notes)	1/1/2025		$36.43	$23.21	$59.64
Truckdriver class 1(see notes)	1/1/2026		$37.93	$23.71	$61.64
Truckdriver class 2 (see notes)	1/1/2025		$36.89	$23.52	$60.41
Truckdriver class 2 (see notes)	1/1/2026		$38.39	$24.02	$62.41

SECTION 007353 - ANTI-POLLUTION

PART 1 GENERAL

1.01 NOTICE TO BIDDERS

A. Section 3301 of the CPC (62 Pa. C.S. 3301) requires that bidders on construction projects for the Commonwealth of Pennsylvania be advised of the Federal and Commonwealth statutes, rules and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources that apply to the project on which bids are being received.

1.02 HISTORY

A. Title 62 “Procurement” of the Commonwealth Procurement Code Chapter 33 “Prevention of Environmental Pollution” was added May 15, 1998, P.L.358, Act No.57, repealing the previous Act No. 247, House Bill number 1969, enacted into law October 26, 1972, and effective as of November 25, 1972.

1.03 SCOPE / REQUIREMENTS

A. The Bidder shall thoroughly acquaint himself with the terms of the statutes, rules, and regulations enumerated in this Section, and shall include in his bid price all costs of complying with the terms of the listed statutes, rules, and regulations. No separate or additional payment will be made for such compliance. In the event that the listed statutes, rules, and regulations are amended, or if new statutes, rules, and regulations become effective, which cause the contractor to perform additional work, the Owner may issue a change order or deviation request setting forth the additional work that must be undertaken. This change order or deviation request shall not invalidate the Contract.

B. It is the responsibility of the Contractor to determine what local ordinances, if any, will affect his work. He shall check for any county, city, borough, or township rules or regulations applicable to the area in which the Project is being constructed, and, in addition, for any rules or regulations of other organizations having jurisdiction, such as chambers-of-commerce, planning commissions, industries, or utility companies who have jurisdiction over lands which the Contractor occupies. Any costs of compliance with local controls shall be included in the prices bid, even though documents of such local controlling agencies are not listed herein.

C. The Contractor will be required to comply with the acts and regulations enumerated on the following list (Paragraph 1.04). This list is comprised of two parts: Part I listing Pennsylvania statutes and Part II listing Federal statutes. The list is illustrative only and in no way limits the Contractor’s responsibility to comply with all federal, state, and local laws, rules, and regulations, as set forth hereof.

D. Each separate contractor shall comply with the regulations and standards of Title 25 “Environmental Protection” of the Pennsylvania Code, Pennsylvania State Agencies (including, but not limited to, Bureau of Air Quality, Office of Pollution Prevention and Energy Assistance, DEP's Environmental Cleanup and Brownfields Program, DEP's Office of Active and Abandoned Mine Operations (AAMO), DEP's Office of Oil and Gas Management, DEP's Bureau of Radiation Protection Bureau of Waste Management, and the Office of Water Management plans), and other regulations and standards of the Department concerning anti-pollution measures all as amended to date. Each Contractor will be solely responsible for any violations and shall be responsible for securing permits, when required.

E. Burning - On-site burning is not permitted by the Owner. Burning of materials from clearing and grubbing operations, periodic and final clean-up and all related construction at any other location shall be governed by local codes and ordinances and the Regulations of the Department. For each day that the Contractor may contemplate open burning, he shall secure written approval from the appropriate Department's Regional Air Quality Control Engineer. Failure to secure permission for open burning will require each separate Contractor to remove material from project site and dispose of it in a manner acceptable to the Department's Regional Air Quality Control Engineer, and in compliance with the Solid Waste Management Act, Act dated July 7, 1980 (P.L. 380, No. 97), as amended, 35 P.S. 6018.101 et seq. If burning is permissible in a State Forest, it shall be performed in a manner approved by the Commonwealth's Department of Conservation and Natural Resources' local district forester.

F. Solid Waste - Storage, collection, transportation, processing and final disposal of solid waste shall be in accordance with regulations and standards of the Solid Waste Management Act. Immediately upon notice of award of Contract, the Contractor shall apply for the necessary permit from the Department's Regional Waste Management Coordinator and conduct waste disposal on sites approved under the permit. A copy of this permit must be submitted to the Engineer before commencing waste disposal (as specified in Section 024200), copy of the permit must also be submitted to the Department's Representative. The Department's Regional Waste Management Coordinator shall be contacted for permit and for information concerning sites already approved for conducting waste disposal.

G. If, in the Department's opinion, a dust condition develops at the site, the contractor shall utilize specific control methods including, but not limited to, water trucks and mechanical brooms to control the creation of dust.

1.04 REGULATIONS

In addition to statutes, rules, and regulations enumerated above, Contractors shall comply with the following:

A. ABBREVIATIONS

§	Section
CPC	Commonwealth Procurement Code
C.S.	Consolidated Statute
et seq.	"and the following"
No.	Acts are numbered consecutively within the year of their legislative action
P.L.	Pamphlet Law
P.S.	Pennsylvania Statute
T	Title (generally designated as a number)

B. PART I - PENNSYLVANIA STATUTES

1. Key Pennsylvania Pollution Prevention Statutes & Regulations and hereinafter listed Purdon's Statutes:

   Environmental Rights Amendment (Article I, Section 27) of the Pennsylvania Constitution

   Pennsylvania Code - Title 25 Environmental Protection

Air Pollution Control Act (Title 35 P.S., Chapter 23)

Pennsylvania's Clean Streams Law (35 P.S. §§ 691.1–691.1001)

Solid Waste Management Act (35 P.S. §§ 6018.101-6018.1003); Solid Waste Management Act of 1980

Small Business and Household Pollution Prevention Program Act (Act 190 of 1996)

Land Recycling and Environmental Remediation Standards Act — governs cleanup and reuse of contaminated sites.

Hazardous Sites Cleanup Act — addresses contamination at sites posing environmental risk.

Storage Tank and Spill Prevention Act — regulates storage tanks and requires cleanup of petroleum or hazardous substance spills.

Pennsylvania Safe Drinking Water Act — protects groundwater and drinking water sources.

Environmental regulations in Title 25 of the Pennsylvania Code implementing these statutory programs (e.g., DEP air and water quality rules).

Water Pollution (25 Pa. Code § 91.34, 91.6, 92a.10)

Covered Device Recycling Act

2. Purdon's Statutes - Title 3 (Agriculture)

PA Pesticide Control Act of 1973, Act of March 1, 1974 (P.L. 90, No. 24), as amended, 3 P.S. 111.21 et seq.

Agricultural Liming Materials Act, Act of March 17, 1978 (P.L. 15, No. 9), as amended, 3 P.S. 132-1 et seq.

Noxious Weed Control Law, Act of April 7, 1982 (P.L. 228, No. 74), as amended, 3 P.S. 255.1 et seq.

Plant Pest Act, Act of December 16, 1992 (P.L. 1228, No. 162), as amended, 3 P.S. 258.1 et seq.

Conservation District Law, Act of May 15, 1945 (P.L. 547), as amended, 3 P.S. 849 et seq.

(Relating to Weather Modification), Act of January 19, 1968 (P.L. (1967) 1024), as amended, 3 P.S. 1101 et seq.

(Relating to Nutrient and Odor Management), Act of July 6, 2005 (No. 38), as amended, 3 Pa. C.S. 501 et seq.

Soil and Plant Amendment Act, Act of December 13, 2001 (P.L. 876, No. 97), as amended, 3 Pa. C.S.A. 6901 et seq.

Seed Act, Act of November 29, 2004 (P.L. 1302, No. 164), as amended, 3 PA. C.S.A. 7101 et seq.

3. Purdon's Statutes - Title 16 (Counties)

   (Relating to Land Use), Act of January 13, 1966 (P.L. (1965) 1292), as amended, 16 P.S. 11941 et seq.

4. Purdon's Statutes - Title 18 (Crimes and Offenses)

   The Crimes Code, Act of December 6, 1972 (P.L. 1482, No. 334), as amended, 18 Pa. C. S. A. 101 et seq.

5. Not Used

6. Purdon's Statutes - Title 30 (Fish)

   The Fish and Boat Code, Act of October 16, 1980 (P.L. 996, No. 175), as amended, 30 Pa. C. S. A. 101 et seq.

7. Purdon's Statutes - Title 32 (Forests, Waters and State Parks)

   (Relating to Water Power and Water Supply Permits), Act of June 14, 1923 (P.L. 704), as amended, 32 P.S. 591 et seq.

   Water Well Drillers License Act, Act of May 29, 1956 (P.L. (1955) 1840), as amended, 32 P.S. 645.1 et seq.

   (Relating to Flood Control), Act of August 7, 1936 (P.L. 106, 1st Ex. Sess., No. 46), as amended, 32 P.S. 653 et seq.

   Flood Plain Management Act, Act of October 4, 1978 (P.L. 851, No. 166), as amended, 32 P.S. 679.101 et seq.

   Storm Water Management Act, Act of October 4, 1978 (P.L. 864, No. 167), as amended, 32 P.S. 680.1 et seq.

   Dam Safety and Encroachments Act, Act of November 26, 1978 (P.L. 1375, No. 325), as amended, 32 P.S. 693.1 et seq.

   (Relating to Stream Clearance), Act of June 5, 1947 (P.L. 422), as amended, 32 P.S. 701 et seq.

   (Relating to Potomac River Pollution), Act of May 29, 1945 (P.L. 1134), as amended, 32 P.S. 741 et seq.

   (Relating to Schuylkill River Pollution), Act of June 4, 1945 (P.L. 1383), as amended, 32 P.S. 751.1 et seq.

   (Relating to Delaware River Pollution), Act of April 19, 1945 (P.L. 272), as amended, 32 P.S. 815.31 et seq.

Delaware River Basin Compact, Act of July 7, 1961 (P.L. 518), as amended, 32 P.S. 815.101 et seq.

Ohio River Valley Water Sanitation Compact, Act of April 2, 1945 (P.L. 103), as amended, 32 P.S. 816.1 et seq.

Great Lakes Protection Fund Act, Act of July 6, 1989 (P.L. 215, No. 34), as amended, 32 P.S. 817.11 et seq.

Brandywine River Valley Compact, Act of September 9, 1959 (P.L. 848), as amended, 32 P.S. 818 et seq.

Wheeling Creek Watershed Protection and Flood Prevention District Compact, Act of August 2, 1967 (P.L. 189), as amended, 32 P.S. 819.1 et seq.

Susquehanna River Basin Compact, Act of July 17, 1968 (P.L. 368, No. 181), as amended, 32 P.S. 820.1 et seq.

Chesapeake Bay Commission Agreement, Act of June 25, 1985 (P.L. 64, No. 25), as amended, 32 P.S. 820.11 et seq.

(Relating to Preservation and Acquisition of Land for Open Space Uses), Act of January 19, 1968 (P.L. (1967) 992), as amended, 32 P.S. 5001 et seq.

Land and Water Conservation and Reclamation Act, Act of January 19, 1968 (P.L. (1967) 996), as amended, 32 P.S. 5101 et seq.

Bluff Recession and Setback Act, Act of May 13, 1980 (P.L. 122, No. 48), as amended, 32 P.S. 5201 et seq.

Wild Resource Conservation Act, Act of June 23, 1982 (P.L. 597, No. 170), as amended, 32 P.S. 5301 et seq.

Cave Protection Act, Act of November 21, 1990 (P.L. 539, No. 133), as amended, 32 P.S. 5601 et seq.

Rails to Trails Act, Act of December 18, 1990 (P.L. 748, No. 188), as amended, 32 P.S. 5611 et seq.

8. Purdon's Statutes - Title 34 (Game)

   The Game and Wildlife Code, Act of July 8, 1986 (P.L. 442, No. 93), as amended, 34 Pa. C.S.A. 101 et seq.

9. Purdon's Statutes - Title 35 (Health and Safety)

   (Related to Public Eating and Drinking Places), Act of May 23, 1945 (P.L. 926), as amended, 35 P.S. 655.1 et seq.

   The Public Bathing Law, Act of June 23, 1931 (P.L. 899), as amended, 35 P.S. 672 et seq.

   The Clean Streams Law, Act of June 22, 1937 (P.L. 1987), as amended, 35 P.S. 691.1 et seq.

PA Safe Drinking Water Act, Act of May 1, 1984 (P.L. 206, No. 43), as amended, 35 P.S. 721.1 et seq.

Phosphate Detergent Act, Act of July 5, 1989 (P.L. 166, No. 31), as amended, 35 P.S. 722.1 et seq.

Plumbing System Lead Ban and Notification Act, Act of July 6, 1989 (P.L. 207, No. 33), as amended, 35 P.S. 723.1 et seq.

PA Sewage Facilities Act, Act of January 24, 1966 (P.L. (1965) 1535), as amended, 35 P.S. 750.1 et seq.

Publicly Owned Treatment Works Penalty Law, Act of March 26, 1992 (P.L. 23, No. 9), as amended, 35 P.S. 752.1 et seq.

PA Solid Waste-Resource Recovery Development Act, Act of July 20, 1974 (P.L. 572, No. 198), as amended, 35 P.S. 755.1 et seq.

(Related to Pollution from Abandoned Mines), Act of December 15, 1965 (P.L. 1075), as amended, 35 P.S. 760.1 et seq.

Sewage System Cleaner Control Act, Act of May 28, 1992 (P.L. 249, No. 41), as amended, 35 P.S. 770.1 et seq.

Combustible and Flammable Liquids Act, Act of February 11, 1998 (P.L. 58, No. 15), as amended, 35 P.S. 1241 et seq.

(Related to Camp Regulation), Act of November 10, 1959 (P.L. 1400), as amended, 35 P.S. 3001 et seq.

Air Pollution Control Act, Act of January 8, 1960 (P.L. (1959) 2119), as amended, 35 P.S. 4001 et seq.

(Related to Noise Pollution), Act of June 2, 1988 (P.L. 452, No. 74), as amended, 35 P.S. 4501 et seq.

Lead Certification Act, Act of July 6, 1995 (P.L. 291, No. 44), as amended, 35 P.S. 5901 et seq.

Solid Waste Management Act, Act of July 7, 1980 (P.L. 380, No. 97), as amended, 35 P.S. 6018.101 et seq.

(Related to Infectious and Chemotherapeutic Waste Disposal), Act of July 13, 1988 (P.L. 525, No. 93), as amended, 35 P.S. 6019.1 et seq.

Hazardous Sites Cleanup Act, Act of October 18, 1988 (P.L. 756, No. 108), as amended, 35 P.S. 6020.101 et seq.

Storage Tank and Spill Prevention Act, Act of July 6, 1989 (P.L. 169, No. 32), as amended, 35 P.S. 6021.101 et seq.

Hazardous Material Emergency Planning and Response Act, Act of December 7, 1990 (P.L. 639, No. 165), as amended, 35 P.S. 6022.101 et seq.

Oil Spill Responder Liability Act, Act of June 11, 1992 (P.L. 303, No. 52), as amended, 35 P.S. 6023.1 et seq.

Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1995 (P.L. 4, No. 2), as amended, 35 P.S. 6026.101 et seq.

Radiation Protection Act, Act of July 10, 1984 (P.L. 688, No. 147), as amended, 35 P.S. 7110.101 et seq.

Low-Level Radioactive Waste Disposal Act, Act of February 9, 1988 (P.L. 31, No. 12), as amended, 35 P.S. 7130.101 et seq.

Waste Tire Recycling Act, Act of December 19, 1996 (P.L. 1478, No. 190), as amended, 35 P.S. 6029.101 et seq.

Worker and Community Right-to-Know Act, Act of October 5, 1984 (P.L. 734, No. 159), as amended, 35 P.S. 7301 et seq.

10. Purdon's Statutes - Title 36 (Highways and Bridges)

    State Highway Law, Act of June 1, 1945 (P.L. 1242), as amended, 36 P.S. 670-101 et seq.

    (Related to Junkyards Along Highways), Act of July 28, 1966 (P.L. 91, Sp. Sess.), as amended, 36 P.S. 2719.1 et seq.

    Highway Vegetation Control Act, Act of December 20, 1983 (P.L. 293, No. 79), as amended, 36 P.S. 2720.1 et seq.

11. Purdon's Statutes - Title 37 (Historical and Museums)

    History Code, Act of May 26, 1988 (P.L. 414, No. 72), as amended, 37 Pa. C.S.A. 101 et seq.

12. Purdon's Statutes - Title 43 (Labor)

    (Related to General Safety), Act of May 18, 1937 (P.L. 654), as amended, 43 P.S. 25-1 et seq.

    Seasonal Farm Labor Act, Act of June 23, 1978 (P.L. 537, No. 93), as amended, 43 P.S. 1301.101 et seq.

13. Purdon's Statutes - Title 52 (Mines and Mining)

    The Coal Mine Sealing Act of 1947, Act of June 30, 1947 (P.L. 1177), as amended, 52 P.S. 28.1 et seq.

    Coal Refuse Disposal Control Act, Act of September 24, 1968 (P.L. 1040, No. 318), as amended, 52 P.S. 30.51 et seq.

    (Related to Coal Land Improvement), Act of July 19, 1965 (P.L. 216, No. 117), as amended, 52 P.S. 30.101 et seq.

    (Related to Mine Fires and Subsidence), Act of April 3, 1968 (P.L. 92, No. 42), as amended, 52 P.S. 30.201 et seq.

PA Anthracite Coal Mine Act, Act of November 10, 1965 (P.L. 721, No. 346), as amended, 52 P.S. 70-101 et seq.

(Related to Discharge of Coal into Banks of Streams), Act of June 27, 1913 (P.L. 640), as amended, 52 P.S. 631 et seq.

(Related to Caving-in, Collapse, Subsidence), Act of May 27, 1921 (P.L. 1198), as amended, 52 P.S. 661 et seq.

(Related to Subsidence), Act of September 20, 1961 (P.L. 1538), as amended, 52 P.S. 672.1 et seq.

Anthracite Strip Mining and Conservation Act, Act of June 27, 1947 (P.L. 1095), as amended, 52 P.S. 681.1 et seq.

(Related to Control and Drainage of Water from Coal Formations), Act of July 7, 1955 (P.L. 258), as amended, 52 P.S. 682 et seq.

PA Bituminous Coal Mine Act, Act of July 17, 1961 (P.L. 659), as amended, 52 P.S. 701-101 et seq.

(Related to Abandoned Mines), Act of May 7, 1935 (P.L. 141), as amended, 52 P.S. 809 et seq.

(Related to Maps and Plans), Act of June 15, 1911 (P.L. 954), as amended, 52 P.S. 823 et seq.

Surface Mining Conservation and Reclamation Act, Act of May 31, 1945 (P.L. 1198), as amended, 52 P.S. 1396.1 et seq.

The Bituminous Mine Subsidence and Land Conservation Act, Act of April 27, 1966 (P.L. 31, 1st Sp. Sess.), as amended, 52 P.S. 1406.1 et seq.

(Related to Cave-in or Subsidence of Surface Above Mines), Act of July 2, 1937 (P.L. 2787), as amended, 52 P.S. 1407 et seq.

(Related to Coal Stripping), Act of June 18, 1941 (P.L. 133), as amended, 52 P.S. 1471 et seq.

(Related to Coal under State Lands), Act of June 1, 1933 (P.L. 1409), as amended, 52 P.S. 1501 et seq.

(Related to Mining Safety Zones), Act of December 22, 1959 (P.L. 1994), as amended, 52 P.S. 3101 et seq.

(Related to Coal Mine Subsidence Insurance Fund), Act of August 23, 1961 (P.L. 1068), as amended, 52 P.S. 3201 et seq.

Interstate Mining Compact, Act of May 5, 1966 (P.L. 40, Sp. Sess. No. 1), as amended, 52 P.S. 3251 et seq.

Non-coal Surface Mining Conservation and Reclamation Act, Act of December 19, 1984 (P.L. 1093, No. 219), as amended, 52 P.S. 3301 et seq.

14. Purdon's Statutes - Title 53 (Municipal Corporations)

Municipal Waste Planning, Recycling and Waste Reduction Act, Act of July 28, 1988 (P.L. 556, No. 101), as amended, 53 P.S. 4000.101 et seq.

15. Purdon's Statutes - Title 58 (Oil and Gas)

    Oil and Gas Conservation Law, Act of July 25, 1961 (P.L. 825), as amended, 58 P.S. 401 et seq.

    PA Used Oil Recycling Act, Act of April 9, 1982 (P.L. 314, No. 89), as amended, 58 P.S. 471 et seq.

    Coal and Gas Resource Coordination Act, Act of December 18, 1984 (P.L. 1069, No. 214), as amended, 58 P.S. 501 et seq.

    Oil and Gas Act, Act of December 19, 1984 (P.L. 1140, No. 223), as amended, 58 P.S. 601.101 et seq.

16. Purdon's Statutes - Title 63 (Professions and Occupations)

    Waste and Wastewater Systems Operators' Certification Act, Act of November 18, 1968 (P.L. 1052, No. 322), as amended, 63 P.S. 1001 et seq.

17. Purdon's Statutes - Title 64 (Public Lands)

    PA Appalachian Trail Act, Act of April 28, 1978 (P.L. 87, No. 41), as amended, 64 P.S. 801 et seq.

18. Purdon's Statutes - Title 71 (State Government)

    The Administrative Code of 1929, Act of April 9, 1929 (P.L. 177, No. 175), as amended, 71 P.S. 51 et seq.

    Conservation and Natural Resources Act, Act of June 28, 1995 (P.L. 89, No. 18), as amended, 71 P.S. 1340.101 et seq.

19. Purdon's Statutes - Title 72 (Taxation and Fiscal Affairs)

    Project 70 Land Acquisition and Borrowing Act, Act of June 22, 1964 (P.L. 131, Sp. Sess., No. 8), as amended, 72 P.S. 3946.1 et seq.

    (Related to Pollution Control Devices), Act of March 4, 1971 (P.L. 6, No. 2), as amended, 72 P.S. 7602.1 et seq.

20. Purdon's Statutes - Title 73 (Trade and Commerce)

    (Related to Explosives), Act of July 1, 1937 (P.L. 2681), as amended, 73 P.S. 151 et seq.

    (Related to Explosives), Act of July 10, 1957 (P.L. 685), as amended, 73 P.S. 164 et seq.

    (Related to Black Powder), Act of May 31, 1974 (P.L. 304, No. 96), as amended, 73 P.S. 169 et seq.

    (Related to Excavation and Demolition), Act of December 10, 1974 (P.L. 852, No. 287), as amended, 73 P.S. 176 et seq.

Site Development Act, Act of May 6, 1968 (P.L. 117, No. 61), as amended, 73 P.S. 361 et seq.

21. Purdon's Statutes - Title 75 (Vehicles)

    Vehicle Code, Act of June 17, 1976 (P.L. 162, No. 81), as amended, 75 Pa. C.S.A. 101 et seq.

    Snowmobile and All-Terrain Vehicle Law, Act of June 17, 1976 (P.L. 162, No. 81), as amended, 75 Pa. C. S. A. 7701 et seq.

    (Related to Hazardous Materials Transport), Act of June 30, 1984 (P.L. 473, No. 99), as amended, 75 Pa. C.S.A. 8301 et seq.

22. Purdon's Statutes - Title 77 (Workmen's Compensation)

    PA Workmen's Compensation Act, Act of June 2, 1915 (P.L. 736), as amended, 77 P.S. 1 et seq.

    PA Occupational Disease Act, Act of June 21, 1939 (P.L. 566, No. 284), as amended, 77 P.S. 1201 et seq.

C. PART II - FEDERAL STATUTES

Acid Precipitation Act of 1980 (42 U.S.C. 8901-8912)

Act to Prevent Pollution from Ships (33 U.S.C. 1901-1912)

Asbestos Hazard Emergency Response Act of 1986 (see Toxic Substances Control Act Sections 201-214 (15 U.S.C. 2641-2654))

Atomic Energy Act of 1954 (42 U.S.C. 2014, 2021, 2021a, 2022, 2111, 2113, 2114)

Clean Air Act (42 U.S.C. 7401-7642)

Clean Water Act (see Federal Water Pollution Control Act)

Coastal Wetlands Planning, Protection and Restoration Act (16 U.S.C. 3951-3956)

Coastal Zone Management Act of 1972 (16 U.S.C. 1451-1464)

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601-9675)

Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001-11050)

Endangered Species Act of 1973 (16 U.S.C. 1531-1544)

Energy Supply and Environmental Coordination Act of 1974 (15 U.S.C. 791-798)

Environmental Quality Improvement Act of 1970 (42 U.S.C. 4371-4375)

Federal Facility Compliance Act of 1992 (42 U.S.C. 6901 note)

Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136-136y)

Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701-1784)

Federal Water Pollution Control Act (33 U.S.C. 1251-1387)

Global Climate Protection Act of 1987 (15 U.S.C. 2901 note)

Hazardous Substance Response Revenue Act of 1980 (see 26 U.S.C. 4611, 4612, 4661, 4662)

Healthy Forest Reforestation Act of 2003 (see 16 U.S.C. 6501-6591)

Lead-Based Paint Exposure Reduction Act (15 U.S.C. 2681-2692)

Lead Contamination Control Act of 1988 (42 U.S.C. 300j-21 to 300j-25)

Low-Level Radioactive Waste Policy Act (42 U.S.C. 2021b-2021d)

Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1401-1445)

Mining and Mineral Resources Research Institute Act of 1984 (30 U.S.C. 1221-1230)

National Climate Program Act (15 U.S.C. 2901-2908)

National Contaminated Sediment Assessment and Management Act (33 U.S.C. 1271 note)

National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321-4370b)

National Historic Preservation Act (NHPA) - Section 106 (54 U.S.C. 306108)

National Invasive Species Act of 1996 (16 U.S.C. 4701-4751)

National Ocean Pollution Planning Act of 1978 (33 U.S.C. 1701-1709)

Noise Control Act of 1972 (42 U.S.C. 4901-4918)

Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101-10270)

Oil Pollution Act of 1990 (33 U.S.C. 2701-2761)

Outer Continental Shelf Land Act Amendments of 1978 (43 U.S.C. 1801-1866)

Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109)

Public Health Service Act (42 U.S.C. 300f-300j-11)

Renewable Resources Extension Act of 1978 (16 U.S.C. 1671-1676)

Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901-699li)

Safe Drinking Water Act (see Public Health Service Act Sections 1401-1451 (42 U.S.C. 300f-300j-26))

Safe Drinking Water Act Amendments of 1996 (42 U.S.C. 300f-300j-18)

Soil and Water Resources Conservation Act of 1977 (16 U.S.C. 2001-2009)

Solid Waste Disposal Act (42 U.S.C. 6901-6992k)

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201-1328)

Toxic Substances Control Act (15 U.S.C. 2601-2692)

Wood Residue Utilization Act of 1980 (16 U.S.C. 1681-1687)

END OF SECTION 007353

SECTION 010000 - REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE

A. Separation of these specifications into divisions and sections is for convenience only and is not intended to establish limits of work. The division of the work is the Contractor's responsibility and the Architect assumes no responsibility to act as arbiter to establish subcontract limits between any sections of the work.

B. Consult index to be certain that set of documents is complete.

1.02 RELATED WORK IN OTHER SECTIONS OR CONTRACTS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Divisions 00 and 02 and all other Sections of Division 01 of these Specifications.

PART 2 PRODUCTS - Not Applicable

PART 3 EXECUTION - Not Applicable

END OF SECTION 010000

SECTION 011000 - SCHEDULING REQUIREMENTS OF THE WORK

PART 1 GENERAL

1.01 SCOPE

A. All work shall be conducted in accordance with the Scheduling Requirements of the Work as hereafter specified. The Contractors shall be responsible for the means, methods and sequences to implement the specified schedule.

1. The General Contractor shall be responsible for submitting a Project Schedule incorporating other Prime Contractor's work and the hereinafter specified milestone dates, as specified in Section 007216 "General Conditions" Article 3. The General Contractor shall incorporate as separate line items within the Construction Schedule scheduling items as listed in Section 013100.
2. Coordination of the work between contractors shall include, but is not limited to, exchange of information about the extent of work, duration of work, identification of work required by others to facilitate the work and the required start, duration and finish times for the work activities.
3. All Contractors shall be responsible for submitting monthly progress schedule updates as specified in Section 007216 "General Conditions" Articles 3 and 9.
4. Note: Construction schedules representing anything less than a five day work week shall not be permitted, see also Section 007216 "General Conditions" Article 3, Paragraph 3.10.

B. The site is limited in size for both the building users and the Contractors. Site access for construction equipment/activities shall be coordinated with the Owner. Construction equipment, trailers, vehicles and material storage, if required, shall be located as directed by the Architect and Owner at the initial Job Conference. Contractors shall be restricted to this area. Only one (1) trailer will be permitted for each Prime Contractor, if needed, and shall be located in the area designated above. All other parking and material storage, which cannot take place within the area(s) designated above, shall take place off site. Failure of a Contractor to police his workmen's parking and material storage requirements shall result in withheld payments and/or fines.

1. All Contractors shall keep all access routes clean and free of debris and material at all times.
2. Temporary signage, fencing, gates, etc., shall be provided by the General Contractor to accommodate safe, on-site traffic and pedestrian movement.
3. The General Contractor shall power wash clean all existing walks and paving soiled from the construction activities on a regular basis and as requested by the Architect during the construction and at the completion of all work.
4. The General Contractor shall take all necessary safety precautions to clearly delineate the construction areas and shall provide barriers (security fences) to prevent unauthorized entry to construction areas. The General Contractor shall provide security fences around work and staging areas to restrict access to these areas.
    a. Contractors shall coordinate their work to allow for continued use of local roadways by the public, as well as access to the site for the Contractors and Owner.
    b. Also refer to Section 015000.
5. Contractors shall repair/restore any area used for staging, storage, parking, etc., as well as any areas damaged by construction activities, to original or better condition at completion of work. Any areas damaged by construction activities shall be replaced by the responsible Prime Contractor as determined by the Architect.
6. Contractors shall maintain the building and site free from soil, dust, dirt, debris, etc., from

construction activities as specified in Section 017413.23 during the construction and at the completion of all work.

C. Coordination drawings shall be completed as per Section 013100 during the timeline specified in Section 011000 so as not to delay work and to resolve field coordination issues. Failure by a Contractor to resolve space conflicts with the coordination drawings will subject the Contractor to paying for all time required by the Architect to resolve the space conflicts. The Contractor shall also make all modifications and relocations that result from lack of coordination with no additional compensation.

D. Prior to the occupancy of the Work by the Owner, the Work shall be inspected by the Code Official to ensure that all life safety items are completed and operational; as well as conduct a final inspection for accessibility.

E. The new ceiling grids shall not be installed until all work above the ceiling is coordinated and installed by all the Prime Contractors. The ceiling panels shall be the last work item installed within the room.

F. Scheduling of all work shall be coordinated with the Owner.
1. Work requiring any shut-offs / shut-downs of heating, plumbing and/or electrical services shall be scheduled with the Owner. Advance notice must be given to the Architect and the Owner when any shut-offs or shut-downs are scheduled.

G. Time Table (All references to “days” shall mean “calendar days”)
1. Submittals:
Contracts, Bonds, Insurances, Detailed Cost Breakdown and Material Source of Supply:

Start		Complete
Notice of Award	-	10 Days

Remaining Submittals, including, but not limited to Construction Schedule, Shop Drawings, Color Selectors/Samples, Coordination Drawings, etc.:

Start		Complete
Notice of Award	-	20 Days

All Shop Drawing Submittals from all Contractors shall include information on the expected lead time of materials/equipment fabrication and/or delivery. Each Prime Contractor is responsible to evaluate and identify priority submittals requiring immediate submission necessary to maintain the project schedule.

2. On-Site Construction:

Start		Complete (including all Punchlist Corrective Work)
Date of Contract	-	November 30, 2026

Completion dates specified above reflect completion of all work, punchlist completion, final cleaning, and Owner moving into all spaces.

3. Final Project Completion Dates:

FINAL PROJECT COMPLETION DATE - NOVEMBER 30, 2026

FINAL PROJECT CLOSEOUT COMPLETION DATE - DECEMBER 31, 2026

"Final Project Closeout Completion" shall be the state when the Project should be completely closed out to receive Final Payment as specified in Section 007216 "General Conditions", Article 9.10.6.

1.02 RELATED WORK IN OTHER SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

B. Technical Specifications.

1.03 PROCEDURES

A. All work shall be completed by the date(s) specified above.

B. Extreme care shall be taken when working around existing utilities designated to remain.

C. At all times, Contractors shall employ all means necessary to eliminate fumes and dust within the existing building. All debris shall be removed immediately. No construction activity shall be left open to the exterior weather conditions.

D. Contractors shall take all necessary safety precautions to clearly delineate construction areas and provide barriers to prevent unauthorized entry to construction areas and to protect the general public.

E. All work shall be conducted in a manner to protect existing facilities (including but not limited to interior and exterior finishes and site conditions) and adjacent properties from damage from construction operations and demolition.

1. The existing building shall not be permitted to remain open or unprotected (day or night).
2. Contractors shall be responsible for cleaning and protecting existing features, finishes, surfaces, etc.
3. Also refer to Sections 017413.23 and 024200.

F. All construction operations creating excessive noise shall be coordinated with the Owner.

1. Contractors shall contact the local (Township/Borough/Municipality) authorities regarding any ordinances which may restrict early morning, late evening, and/or weekend work hours.

G. The scheduling requirements as outlined above have been established in an effort to cause the least disruption to the Owner. Inadequate or insufficient scheduling by the Contractors to meet the time allowance shall not result in delay claims to be filed against the Owner or the Architect. Contractors desiring to alter the above requirements for the benefit of the Project and Owner, shall submit such in writing for the Owner's and Architect's consideration. Once a revision is approved and implemented, it shall be as binding as the original schedule.

1. Contractors shall include in their bid all extra time, in any form such as shift work, overtime, and premium time, necessary to meet these scheduling requirements. As specified in Section 007216 "General Conditions", Article 3, Paragraph 3.3.2, any claims for additional costs associated with completion of the Work within the required Contract time frames will not be considered.
2. Failure to meet the final project completion date for construction work, including punch list work,

shall result with the specified liquidated damages being assessed (Section 002000).

H. After Owner occupancy of premises, coordinate access to site for correction of defective Work and work not in accord with Contract Documents, to minimize disruption of Owner's activities.

END OF SECTION 011000

SECTION 012300 - ALTERNATES

PART 1 GENERAL

1.01 SCOPE

A. Bids shall be entered in the proper spaces of Proposal for Contract.

B. Refer to drawings and/or see applicable sections of the specifications for labor and materials involved in each Alternate Bid.

C. Amount shown in bid, for each alternate, shall include the making of all changes, and the installation of all materials and equipment necessary to the accomplishment of the alternate requirements in accordance with the contract documents.

1.02 RELATED WORK IN OTHER SECTIONS OR CONTRACTS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

B. It shall be the Contractor's responsibility to review all related documents for the work of all trades involved with each Alternate Bid. The Contractor shall understand the extent of work added or deleted for each trade and shall properly coordinate the work to provide a complete and workable system.

C. It shall be this Contractor's responsibility to secure and review the related alternate bids for all of the other separate contracts for this project. The Contractor shall understand the extent of work added or deleted from all contracts and shall properly coordinate his work to provide a complete and workable system. Plans and specifications for all contracts are available for viewing or purchase as defined in "Instructions to Bidders".

1.03 ALTERNATE BIDS - CONTRACT NO. 1 - GENERAL CONSTRUCTION

A. Alternate Bid No. G-1 shall be the amount to be **ADDED TO** the Base Bid for providing the translucent polycarbonate-panel canopy assembly as specified in Section 107316 and all related work as shown on drawings.

1.04 ALTERNATE BIDS - CONTRACT NO. 2 - HVAC CONSTRUCTION

A. Refer to HVAC Section 230512 - HVAC Alternates, for description of Alternate Bids as follows:
   1. Alternate Bid No. H-1 to provide dehumidification air handling unit (DAHU-1) in lieu of air handling unit (AHU-1). **(ADD or DEDUCT).**

1.05 ALTERNATE BIDS - CONTRACT NO. 3 - PLUMBING CONSTRUCTION

A. There are no Alternate Bids under this Contract.

1.06 ALTERNATE BIDS - CONTRACT NO. 4 - ELECTRICAL CONSTRUCTION

A. Alternate Bid No. E-1 shall be the amount to be **ADDED TO or DEDUCTED FROM** the Base Bid for providing electrical work associated with Alternate Bid No. H-1.

END OF SECTION 012300

SECTION 012513 - PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SUBSTITUTIONS

A. Substitution requests shall be submitted on Product Substitution Form - Section 012513.25 within time restrictions as herein described and conforming to requirements specified in this section:

1. Any request for product substitution must be submitted for review, with all necessary documentation, at least ten working days (i.e., Monday through Friday, excluding legal holidays) prior to time for receipt of bids.
2. After end of that period, requests will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.
3. Requests for substitution of materials or products by E-mail must be complete on Architect's forms with all accompanying information edited clearly to indicate equivalency to specified product/fixture/equipment.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Support each request with:

1. Itemized comparison of the proposed substitution with product specified, list all variations.
    a. Product identification, including manufacturer's name and address.
        1) Product description.
        2) Reference standards.
        3) Performance and test data.
    b. Samples: Submit full size working samples for Architect's review of all items requested.
    c. Name and address of similar projects on which product has been used, and date of each installation.
2. Change in construction schedule.
3. Effect of substitution on other separate contracts.
4. List of changes required in other work or products.
5. Accurate cost data comparing proposed substitution with product specified.
    a. Amount of any net change to Contract Sum.

C. A request constitutes a representation that the bidder or Contractor:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
6. Cost data is complete, and includes cost related to his contract, but not cost under other separate contracts.

D. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitute products which are ordered or installed without written acceptance of Architect/Engineer

shall be rejected and full cost resulting therefrom shall be the contractor's responsibility.

1.02 RELATED WORK IN OTHER SECTIONS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

B. Product Substitution Form - Section 012513.25.

C. In addition to procedures described in this Section, comply with requirements for substitutions as may be specified in Technical Specification Sections of this Project Manual.

END OF SECTION 012513

SECTION 012513.25 - PRODUCT SUBSTITUTION FORM

1. Submissions for approved substitution will be permitted and processed in accord with Section 012513 “Product Substitution Procedures”.

2. Submissions will be "Received Dated" immediately upon arrival at the office of HHSDR, Architects/Engineers.

3. Submissions will be filed until they are reviewed.

4. Submissions will not be reviewed for completeness or compliance after the tenth working day prior to the bid due date at 5:00 PM.

5. Submittals will be reviewed by members of the project teams.

6. The Reviewer's General Criteria for Review will be:

   A. The burden of proof of performance equality and the completeness of this submittal is the responsibility of the submitter.

   B. The reviewer will not be required to complete the submittal, that is, select from options or between models and lines of products.

   C. The reviewer will not be required to seek information from the manufacturer's literature on file in the office, or information from other locations.

   D. The product must be equal, or better in those features and performance which the specified product provides.

   E. When in the reviewer's opinion significant deficiencies are established, further review of submitted data is not required.

7. The reviewer will note action (approval or disapproval), the date, and his initials.

8. If a submittal is disapproved, reviewer will make notations that will be adequate to guide a later reviewer to the same conclusion. Sample notations may be "Submittal vague", "incomplete", or "product equality not substantiated".

9. Approval of a substituted item will be communicated to Bidders in the form of an Addendum.

10. Any substitution requests made after receipt of bids shall be submitted through the awarded Contractor.

END OF TEXT
(FORM FOLLOWS)

SUBSTITUTION REQUEST FORM

PROJECT _____

CONTRACTOR/SUPPLIER _____

We hereby submit for consideration, the following product instead of specified item for above project.

SECTION/DRAWING _____ PARAGRAPH/DETAIL _____ SPECIFIED ITEM _____

Proposed substitution: _____

ATTACHMENTS: (If not applicable, write N/A in space provided)

No.1 Complete Product Data, including technical data and laboratory tests, if applicable.

_____

No. 2 Drawings showing dimensional changes. _____

No. 3 Complete description of changes to drawings and/or specifications which proposed substitution will require for its proper installation.

_____

_____

No. 4 Necessary samples and substantiating data to prove equal quality, performance and appearance to that which is specified. Clearly mark manufacturer's literature to indicate quality in performance. Differences in quality of materials and construction shall be indicated.

_____

_____

No. 5 List of names and address of three (3) similar projects on which product was used, date of installation, and Architect/Engineer's name, address, and telephone numbers.

_____

_____

_____

_____

_____

Fill in blanks below (provide attachments if more space is necessary).

A. Does the substitution affect dimensions indicated on the Contract Drawings?

Yes ____ No _____ If yes, clearly indicate changes: _____

_____

B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?

_____

C. What effect does substitution have on other trades, other contracts, and Contract Completion Date?

D. What effect does substitution have on applicable code requirements?

E. List differences between proposed substitution and specified items:

F. Identify manufacturer's guarantees:

G. Identify cost impact:

Undersigned attests function and quality equivalent or superior to specified item.

CERTIFICATION OF EQUAL PERFORMANCE:

Submitted by: Title:
Firm:
Address:

Telephone: Date:

Signature:

* * * * * * * * * * * * *

For Use by the Architect/Engineer:

Accepted: Accepted as Noted

Not Accepted Received Too Late

By: Date:

Remarks:

SECTION 013100 - PROJECT MANAGEMENT & COORDINATION

PART 1 GENERAL

1.01 SCOPE

A. Work included: All Contractors shall coordinate the requirements of their work for uninterrupted performance of the work to the date of completion.

1.02 RELATED WORK IN OTHER SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

B. Technical Specifications

1.03 COORDINATION

A. The General Contractor is designated as the Lead Contractor for the Project as specified in the General Conditions Section 007216 Article 3, Paragraph 3.3.1.1. The General Contractor shall prepare and submit a comprehensive construction schedule as specified in the General Conditions Section 007216 Article 3, Paragraph 3.10.1. All Contractors shall coordinate the requirements of their work with the General Contractor so that the construction schedule will indicate the obligations of each Contractor for uninterrupted performance of the work to the date of completion.

1. Coordination of the work between contractors shall include, but is not limited to, exchange of information about the extent of work, duration of work, identification of work required by others to facilitate the work and the required start, duration and finish times for the work activities.
2. The General Contractor shall incorporate as separate line items within the Construction Schedule dates as follows:
    a. schedules for construction testing as specified in separate technical sections of each Contract/trade and/or as required by the PA UBC, including but not limited to:
        1) cast-in-place concrete testing (initial field test reports, seven day cylinder test reports and 28 day cylinder test reports;
        2) earthwork proofroll evaluations, foundation design bearing verification reports, and compaction testing.
        3) coordinate with other Prime Contractors to incorporate anticipated dates for HVAC, plumbing, and electrical work as required.
    b. schedules for coordination drawings. The HVAC Contractor shall be the lead contractor in completing Coordination Drawings.
    c. schedules for commissioning dates for applicable systems, as specified in separate technical sections, including but not limited to, HVAC work, electrical systems, etc.
    d. schedules for Punch Lists.
    e. release dates for ordered materials.

B. Each Prime Contractor shall verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Each Prime Contractor shall coordinate scheduling, submittals, and Work of the various sections of

specifications to assure efficient and orderly sequence of installation of interdependent construction elements with provisions for accommodating items to be installed later.

D. Each Prime Contractor shall coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on the Contract Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

1. Each Prime Contractor shall be responsible for coordinating and reporting the work of their respective sub-contractors.

E. Meetings

1. Job conferences will be held while construction is in progress, as specified in the General Conditions, Section 007216 Article 3, Paragraph 3.16.2. Each Contractor's representative shall be in attendance. Problems of co-ordination and clarifications shall be reviewed and discussed at these conferences.
2. Contractors shall initiate additional coordination meetings as required to resolve interferences in the Work. Each Contractor shall provide all necessary resources to ensure that the coordination process described herein does not delay the Approved Project Schedule.

1.04 COORDINATION DRAWINGS

A. Coordination drawings shall be prepared for review by all Prime Contractors; coordination drawings shall include but not be limited to the following. The Contract Documents will be used as guide, with final approved coordination drawings governing installation sequence.

1. The HVAC Contractor shall be the lead contractor in completing Coordination Drawings. The HVAC, Plumbing, and Electrical Contractors shall each prepare coordination drawings of routing of conduit, ductwork and piping. Ductwork/piping coordination drawings shall be distributed within fifteen (15) days of the Date of Contract. The HVAC Contractor shall provide the final composite coordination drawings within twenty (20) days of the Date of Contract to each Contractor, the Architect, and the Owner. The HVAC Contractor shall prepare CAD coordination drawings to forward to each Prime Contractor for layout of their work; each Prime Contractor shall show his work on the CAD coordination drawings and sign and date his entry. All interference issues shall be resolved.
2. General Contractor shall prepare lay-in ceiling coordination drawings for project use. Coordination drawings shall be distributed within twenty-five (25) days of the Date of Contract. The General Contractor shall show the layout of lay-in ceilings on the HVAC Contractor's CAD coordination drawings.
3. Contract Documents will not be available in certain electronic formats, i.e., AutoCAD, Microsoft Word, etc., for use by Contractors in preparation of Coordination Drawings. Contractors shall have limited access to portable document format (.pdf) files of Contract Documents.

B. Each Contractor shall thoroughly review the coordination drawings of the other Prime Contractors and shall modify his intended routing or installation location to suit the requirements shown. The General and Electrical Contractors shall review the HVAC and Plumbing Contractors' coordination drawings regarding reflective ceiling plans, lighting fixture layout, conduit routing, cable tray routing, etc., sufficient to coordinate the work of all the Prime Contractors. Each Prime Contractor shall add their particular trade item affecting coordination of the work.

C. Once reviewed, commented on, and approved by each Prime Contractor, the HVAC Contractor shall submit two (2) hard copies to the Architect/Engineer with any revisions to Contract Documents clearly

identified for the Architect's/Engineer's review, prior to work proceeding. The HVAC Contractor shall be responsible for distributing the final composite coordination drawings (hard copy format) to each Prime Contractor requiring coordination of said work, the Architect, and the Owner's Representative.

1. Contractors shall maintain on-site, one copy of Final Composite Coordination Drawings as Record Documents (for their Contract), for future reference in the event of conflict between the trades and to record any agreed/approved upon revisions. The HVAC Contractor shall be responsible for coordinating any revisions by all Contractors onto a comprehensive set of Final Composite Coordination Drawings to be turned over to the Owner for the Owner's records at completion of the work. As specified in Section 017700, in addition to submittal of "hard" copies of all documents, Contractor shall submit "CD" of scanned .pdf's of all marked up documents.

1.05 PRE-INSTALLATION CONFERENCES

A. When required in individual specification sections, the Architect shall convene a Pre-installation Conference at the work site prior to commencing work of the section. The purpose of Pre-installation Conferences includes, but is not limited to, review conditions of installation, preparation, installation procedures, and coordination with related work. Pre-installation Conferences include, but may not be limited to the following:

1. Earthwork
2. Cast-in-Place Concrete
3. Roofing
4. Windows
5. Door Hardware
6. Tilework
7. Finish Flooring
8. Painting
9. Seeding
10. HVAC Temperature Controls
11. Lighting & Control Systems
12. A representative of each Prime Contractor is required to attend Pre-installation Conferences on earthwork, concrete, and roofing for the coordination of the work.
13. The Prime Contractor, responsible for performing the work, shall indicate in writing which work of other separate Prime Contractors he will need information about in order to coordinate the work of other Prime Contracts properly.

B. The Prime Contractor responsible for the work to be reviewed during the Pre-installation Conference shall coordinate a meeting date with the Architect and then notify those to attend at least five days in advance of meeting date. Required attendees:

1. Prime Contractor and his sub-contractor responsible for the work; all applicable material suppliers, manufacturer's technical representatives, and testing agency representatives; representative(s) of the Architect/Engineer; Owner's representative; and appropriate representatives of other Prime Contractors as designated in Paragraph 1.05.A.12 and 13.
2. If everything as specified for the pre-installation conference meeting (i.e., all submittals, meeting attendees, etc.) are not in order and the meeting cannot be held and/or cannot be productive, the Prime Contractor responsible for coordinating the meeting will be charged by the Owner and another date will be established.

C. The Architect shall be responsible for the following:

1. Prepare agenda, chair the meeting, record minutes, and distribute copies after conference to participants.

1.06 SITE SAMPLES TO BE REVIEWED PRIOR TO COMMENCEMENT OF WORK

A. When required in individual specification sections, prior to commencement of certain work on site, the Contractor shall prepare sample installations of specified work at the job site for review/approval by the Owner and Architect. Sample locations may be determined at certain pre-installation conferences and/or as coordinated with the Owner and Architect. Completed sample installations shall be reviewed and approved by the Architect and Owner prior to commencing with additional work on site. The reviewed/approved sample(s) shall serve as Standard(s) for the project work. Site samples to be reviewed prior to commencement of work include, but may not be limited to the following:

1. Exposed Concrete Floors – Section 033000
2. Tilework (Sample wall and floor) – Section 093000
3. Painting (Sample Wall) – Section 099000

END OF SECTION 013100

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary ventilation, sanitation facilities, trash facilities, and utilities.

B. Temporary Controls: barriers, security enclosures and fencing, and protection of the work.

1.02 RELATED SECTIONS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

1.03 TEMPORARY VENTILATION

A. Each Prime Contractor, and their Subcontractors, shall provide the necessary equipment to properly ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases. Also see Paragraphs 1.12.C and 1.19.

1. In any instance, the General Contractor shall employ dehumidification equipment as required to install finishes according to technical specifications and as required to meet construction schedule.

B. Provide temporary fan units as required to maintain clean air for construction operations. Service any permanent equipment, used during construction, at project closeout to brand new condition for new equipment and repair to same or better condition for existing equipment, plus replace filters, including, but not limited to, air handling units, rooftop units, and unit ventilators. Note: permanent mechanical cooling equipment shall not be operated to ventilate spaces under construction, also see Paragraph 1.12.C., Contractors shall employ dehumidification equipment as necessary to maintain specified conditions for installations of finishes.

1.04 TEMPORARY SANITARY FACILITIES

A. The General Contractor shall provide, and maintain in a neat and sanitary condition, portable toilet accommodations for the use of all workmen engaged on the project as may be necessary to comply with all requirements and regulations of the state, local departments of health, OSHA or of agencies having jurisdiction thereof. The General Contractor shall provide necessary janitorial services, toilet paper, etc. The Contractor shall permit no public nuisance or unsanitary conditions to exist on the project site.

B. The General Contractor shall provide and maintain at least one (1) portable toilet unit near the job office trailers and additional facilities as may be required by Authorities having jurisdiction for the total number of workmen involved, including females.

C. At end of construction, remove temporary facilities, return grounds and facilities to same or better condition than adjacent environment.

1.05 BARRIERS

A. General Contractor shall take all necessary safety precautions to clearly delineate the construction areas and shall provide barriers to prevent unauthorized entry to construction areas and to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Each Prime Contractor shall provide barriers as necessary for any site utility trenching and/or excavation performed under their contracts.

C. All Contractors shall:
1. Protect existing facilities and adjacent properties from damage from construction operations and demolition.
2. Protect plant life designated to remain. Replace damaged plant life.
3. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
4. Provide and maintain OSHA approved barriers/protection at all excavations, roofs, etc. If the construction work of any Prime Contractor requires the removal of temporary controls or protection erected by another, the Prime Contractor who removed the temporary control or protection shall replace same to meet the OSHA requirements, at his expense.

D. Barriers include but may not be limited to site fencing, exterior enclosures, interior enclosures, etc., further specified throughout this Section.

1.06 FENCING

A. The General Contractor shall provide and maintain site fencing as required for jobsite safety and security. The General Contractor shall take all necessary safety precautions to protect the general public from the work, as well as, to secure the work from unauthorized access and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Fencing shall include the following:
1. If required by local/state/federal regulations, the Owner and/or Architect, to maintain the safety of the general public, temporary fencing surrounding construction/staging areas shall be Commercial grade chain link fence, 9 gage, 8' minimum height, sufficient size posts to structurally support fence, and any gate as may be required to access the area.
2. Fence all trees or shrubs designated to remain, to an area sufficient to protect the tree or shrub from any possible damage. Fenced areas shall not be used for storage of materials or for any purpose likely to damage tree roots or branches. Leave fencing in place until removal is required to complete fine grading and seeding.
3. Plastic safety fence shall be required around the limits of contract, as well as, around limits of work beyond the chainlink fence as required to secure the work from the general public. Fence shall be Heavy Duty Construction Plastic (HDPE) Fence such as Tenax Orange Sentry HD Safety Fence 4'H, or equivalent product. Provide with green steel posts. Fence Mesh Size: 2.36" x 2.36" maximum.

B. The General Contractor shall be responsible to maintain and relocate, during progress of project, all temporary fencing for the duration of his contract, location and extent of fencing and location of gates shall be in accord with the directions of the Architect.

C. The General Contractor shall remove all temporary fencing at the end of the project and restore site as necessary.

1.07 MAINTENANCE AND PROTECTION OF TRAFFIC

A. Contractors shall provide and maintain vehicular traffic on all local streets during the construction. Contractors shall furnish and install all signs, barricades, flagmen, etc. necessary to control and direct traffic safely. Ingress and egress to existing facility site shall be available at all times. The maintenance and protection of traffic shall be in accordance with PennDOT Pub. 408, Section 901 “Maintenance and Protection of Traffic During Construction”, and PennDOT Pub. 213 “Temporary Traffic Control Guidelines” for work along PennDot roadways.

1.08 EXTERIOR ENCLOSURES

A. All Contractors shall maintain the existing building in a secure, weathertight condition at all times. Construction materials shall be protected during erection to prevent the accumulation of moisture/water/windblown debris within the building construction.

1. Provide temporary insulated weathertight closure of all exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons.

B. Heat within the existing building shall be maintained as specified in Paragraph 1.12.C.

1.09 CONSTRUCTION AIDS

A. Each Prime Contractor shall provide construction aids and equipment required by personnel and to facilitate execution of the work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.

1. Refer to and comply with all applicable local, state, and federal regulations for worker safety, public safety, and fire protection.

B. Relocate construction aids as required by progress of construction, by storage or work requirements, and to accommodate legitimate requirements of Owner and other contractors employed at the site.

1.10 PROTECTION OF INSTALLED WORK

A. Each Prime Contractor shall:

1. Protect his installed Work and provide special protection as required by individual specification sections.
2. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.
3. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
4. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
    a. All new finish flooring materials and/or finished interior exposed concrete slabs, once installed, must be completely covered by the General Contractor with material as specified in Technical Specifications for finish flooring.
    b. For movement of heavy products, lay planking or similar materials in place.
    c. For storage of products, lay tight wood sheathing in place.
    d. Cover walls and floor surfaces used by construction personnel.
5. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

6. Prohibit traffic over landscaped areas.

B. Each Prime Contractor shall be responsible to protect his installed work until such work is turned over to and accepted by the Owner in writing (i.e. Certificate of Substantial Completion). Any damage to such work shall be corrected by the Prime Contractor initially responsible for the work, regardless of how the damage was sustained. Contractors are to refer to Section 007216 General Conditions, Article 6, Paragraph 6.2.3.1 regarding claims against each other for work damaged by another Contractor.

1.11 SECURITY

A. The General Contractor shall provide facilities to protect and secure the Work, and existing facilities, and all construction operations from unauthorized entry, vandalism, or theft. This program shall be to the satisfaction of the Architect and Owner.

B. Each Prime Contractor shall be responsible for the security of their own materials and equipment stored on the project site.

C. Each Prime Contractor shall coordinate with the General Contractor's security program.

1.12 TEMPORARY UTILITES

A. Temporary Water Service
   1. The Plumbing Contractor shall maintain an adequate water supply for all Contractors during the Project. The Plumbing Contractor shall furnish all necessary materials and make connections for water service.
   2. Water lines/connections to equipment shall be installed by the Plumbing Contractor in sufficient time to be available for supplying water for testing and operation of the various systems when needed.
   3. The Owner will pay for costs of all water used during construction.
   4. Should any Contractor require special water service other than that made available, said Contractor shall be responsible for providing the necessary source or means of providing said water, including all equipment, and connections with protection. All costs pertaining to special water service shall be borne by the Contractor.
   5. When temporary lines are no longer required, they shall be removed by the installing Contractor and any part or parts of the ground or building, disturbed or damaged, shall be restored to the original condition by said Contractor.

B. Temporary Light and Power Service
   1. The Electrical Contractor shall extend and terminate temporary electrical power to construction areas (minimum 10 foot candles), at locations acceptable to the General Contractor, Architect and the Owner. The Electrical Contractor shall provide adequate general lighting and general power outlets for all contractors for the proper conduct of their work to the satisfaction of the Architect.
   2. Prohibitive Electric:
      a. Electric welders will not be permitted on the project. Portable units must be used.
      b. Electric temporary heaters are not permitted.
      c. Electric construction equipment/tools featuring excessive amperage (>20 amps) shall be fed from Contractor provided generators.
      d. Electric Service to construction trailers will not be available.

e. In all cases the feeds shall not present a hazardous condition to the construction of and/or movement about the Project.

3. If temporary lighting is still in use at the time that finished coats of paint are being applied, then the temporary lighting shall be of the same source, orientation, and foot candle intensity as the final lighting specified for the space (example: T-8 SP35 fluorescent, ceiling mounted, 50 foot candles). This lighting may be provided in a portable fashion in the area being painted and is not necessarily intended to infer that the whole space be filled to such intensities.
4. The Electrical Contractor shall pick up the source of power for the temporary service from existing power sources. Do not overload the existing panels. Provide adequate fuse protection and necessary ground fault protection required by Code. In all cases the feeds shall not present a hazardous condition to the existing building. The temporary power shall be sized appropriately for the loads served.
5. Any Contractor requiring special power, other than that furnished, shall be responsible for providing the necessary source or means of providing said power and shall provide feeder from same with protection. All costs pertaining to special power service shall be borne by that Contractor.
6. The Owner will pay the cost of all electrical energy used on distribution lines (permanent and/or temporary) installed by the Electrical Contractor until the Project is accepted by the Owner. The Electrical Contractor shall provide and pay for all materials, maintenance, servicing, operation and supervision of the service and distribution facilities (permanent and/or temporary). The Electrical Contractor shall maintain service at all times.
   a. Contractors shall be responsible to turn off lights, etc., each night and on weekends/holidays.
7. When the temporary electrical lines are no longer required they shall be removed by the Electrical Contractor, who shall restore to their original condition any part, or parts of the ground or building disturbed or damaged. All material associated with temporary power distribution facilities not required for the permanent service shall become the property of the Electrical Contractor.

C. Temporary Heat
1. The HVAC Contractor shall maintain heat in the existing building at a minimum temperature of 70˚ F. at all times either by means of the existing heating system, temporary heating equipment or by means of the new permanent system, whichever is appropriate.
   a. The HVAC Contractor shall maintain ventilation in the existing building at all times.
   b. The General Contractor shall provide the necessary equipment to properly ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
   c. Also see Paragraph 1.03 Temporary Ventilation.
2. Prohibitive temporary heat:
   a. The use of electric temporary heaters is strictly prohibited.
   b. Use of open burning type temporary heating units is prohibited.
   c. Provide fire extinguishers during operation of portable heat sources.
3. Note: Permanent HVAC equipment shall not be operated during demolition and until all plastering, parging, sanding, etc., construction in an area is complete and the area cleaned of dust and debris. Permanent mechanical cooling equipment shall not be operated in areas under construction, said equipment shall be operated for check-out and troubleshooting only until commissioning/balancing is complete.
4. If plastering or parging of any surfaces is necessary to enable the HVAC Contractor to install the permanent heating system in a manner to permit its use for supplying temporary heat during the construction period, the plastering or parging of these surfaces shall be done by the General

Contractor sufficiently in advance of the work of the HVAC Contractor so as not to delay the installation of the permanent system. In the event this plastering or parging work is not completed in ample time to make possible the installation of the permanent piping and heating units in a particular area, the HVAC Contractor shall install temporary piping and heating units and cost of such temporary installation shall be paid by the General Contractor.

5. The Owner will pay for all water, electricity and fuel required for the operation of the permanent heating system (existing and/or new).
    a. If portable heating units are used, the HVAC Contractor shall supply and pay for fuel used in these units.

D. Maintaining Existing Systems

1. Existing systems which remain in use, as well as, new systems installed and activated during the construction work, shall be maintained by the Contractor, i.e. HVAC systems; Plumbing systems; and Power, Lighting, Fire Alarm, Sound, etc., systems. Damage to these systems caused by work under this contract shall be repaired at the Contractor's expense.
2. Advance notification shall be given the Architect and Owner when any shut-offs or shut-downs of the building systems are scheduled. Advance notification time frames shall be as specified in the mechanical and electrical technical specifications.

1.13 STAGING AREAS

A. Use only designated construction access roads for construction traffic. Coordinate any possible access restrictions to the site with local city, town, and/or borough requirements.

B. The location of the construction staging/parking area shall be coordinated with the Owner and the Architect.

C. All existing walks and roads on and/or adjacent to the site are to be kept free of soil/debris at all times. The General Contractor shall broom and/or power clean and wash all existing walks and paving soiled from the construction activities. Also refer to Section 017413.23. All trucks leaving the site must remove any soil from wheels before leaving site.

1.14 TRASH

A. The General Contractor shall be responsible for providing trash collection facilities for the project, including other Prime Contractors, relocating said facilities as necessary during Project construction, and removing said facilities at Project completion. The trash from the work of the other Prime Contractors that the General Contractor will provide collection for shall be defined as normal construction debris throughout the work area, i.e. cardboard, crating, metal bands, dirt, paper, etc. Equipment and system items, i.e. boilers, unit ventilators, piping, ductwork, light fixtures, motors, pumps, etc., shall not be defined as trash. Non-trash items shall be collected and disposed of by the Prime Contractor demolishing or removing them. Other Prime Contractors shall coordinate their specific trash needs with the General Contractor and establish a cost and form of payment plan to the General Contractor for such need.

1. Trash collection facilities shall be located in coordination with Owner.
2. Each Prime Contractor or subcontractor will be responsible to collect and to deposit his debris, garbage, litter, rubble, and rubbish in such collection facilities daily.
    a. Contractors shall dismantle crates, crush cardboard boxes, and otherwise attempt to compact all such trash deposited in these collection facilities.
3. Each Prime Contractor will be responsible for the overall cleanliness of the entire jobsite, as specified in Section 017413.23. Those Prime Contractors who do not comply with the overall

procedures and standards shall be reported to the Owner for possible reduction of their Contract Sum.
4. Trash, dust, and dirt of any kind shall not be allowed to accumulate.
5. Contractors shall collect and remove their own liquid waste from the jobsite.
6. No burning of trash, debris, and rubbish is allowed.

B. The Prime Contractor responsible for the cutting and patching demolition work is responsible to collect and deposit the demolition debris, trash, dirt, scrap, rubbish, and dust created by that demolition work in trash collection facilities.

C. The General Contractor shall remove trash collection facilities as required as the project progresses and restore said areas to their original condition, as good or better.

D. Disposal of all waste materials and/or rubbish shall be in compliance with County and State solid waste laws.

1.15 SNOW REMOVAL

A. The General Contractor shall provide snow removal from all site construction areas, the construction staging/parking area to the building construction areas, as well as within the construction and staging/parking areas, as necessary to maintain access and safe working conditions and as required to ensure project completion dates.

B. Each Prime Contractor shall remove all snow accumulations from their excavation areas.

1.16 FIRE PROTECTION

A. The General Contractor will provide general temporary fire protection requirements.
1. Other Prime Contractors and subcontractors will be responsible for their own specialty requirements (such as cutting, welding, burning).
2. All Prime Contractors shall review their fire protection plan with the Local Municipality's Fire Chief before commencing work.

B. The General Contractor shall provide and maintain fire extinguishers in all construction areas.

1.17 PROJECT INFORMATION SIGNS

A. The General Contractor shall provide construction signs as required by law, including:
1. Bulletin boards with protective covers to post safety and code notices, prevailing wage act, OSHA signs, etc., for use by all Prime Contractors.
2. Project funding sign as specified in Section 002000.

1.18 FIELD OFFICES AND SHEDS

A. Contractors may provide their own field office and/or storage shed as required by their needs, if space Is available on site and the Contractor receives the Owner's permission, also refer to Section 011000, only one trailer will be permitted per Contractor. If the Contractor requires any power and/or phone connections to his field office, said Contractor shall arrange for same, at the Owner's approval, and pay all costs associated to said connections as well as all utility usage and service costs. The Contractor shall remove

his trailer, shed, and any temporary utility service when they are no longer required and restore said area to original or better condition.

1. Each Prime Contractor is required to provide his field superintendent with a means to be contacted by the Owner, Owner's Representative (Clerk of the Works), and/or Architect.
2. Contractor's identification sign may be posted on their field office. No other sign, billboard, or advertisement is permitted by any Contractor.

1.19 PREVENTION OF DUST / DIRT ACCUMULATION

A. During construction and/or demolition operations, take necessary precautions/measures to prevent dust or dirt from rising and avoid dust, dirt and debris entering surrounding areas, classrooms, and/or buildings. The following non-all-inclusive list of recommendations is provided to aid in the reduction of construction dust/debris exposure:

1. Wet wipe, and/or use a HEPA filtered vacuum, clean all surfaces in occupied areas.
2. Isolate work areas by sealing doorways (not intended for emergency evacuation exits) with 6 mil polyethylene sheeting.
3. Separate air plenum of work areas from occupied areas; seal with polyethylene sheeting or fiberglass batting.
4. Ventilate work areas using fans to create negative pressure zone exhausting air out of the building; operate fans continuously. See also Paragraph 1.03.
5. While work is being performed, lightly mist with water to aid in controlling dust in the interior work area. Do not water damage construction/materials to remain.
6. Use water saws, not dry saws, to cut concrete, masonry, tile, etc.
7. Place a series of flaps at doorways between work areas and occupied areas.
8. Install carbon monoxide alarms set to 10ppm in work areas utilizing combustion operated equipment. Stop work, if the alarm deploys.

1.20 TEMPORARY EROSION AND SEDIMENT CONTROL

A. Each Prime Contractor performing site excavation work, shall comply with the soil erosion control plan as indicated on drawings, as well as all laws, regulations and guidelines regarding soil erosion control at all disturbed areas under each respective Contract.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Each Prime Contractor shall remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Final Completion and Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary work. Restore facilities used during construction to original or better condition.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Standard of Quality

B. Products.

C. Transportation and Handling.

D. Storage and Protection.

1.02 RELATED WORK IN OTHER SECTIONS

A. Documents affecting work of this Section include Division 00 and other Sections of Division 01 of these Specifications.

1.03 STANDARD OF QUALITY

A. The various materials and products specified in the Specifications by name or description are given to establish standards of quality and of cost for bid purposes. It is not the intent to limit the bidder, the bid or the evaluation of the bid to any one material or product specified, but rather to describe the minimum standard that is desired and acceptable. A material or product of lesser quality would not be acceptable. Where proprietary names are used as requested by the Owner, substitutions will not be acceptable. Proprietary shall be defined by specifying one manufacturer with no opportunity for substitutions of other manufacturers. A bid containing an alternative which does not meet the specifications may be declared non-responsive. A bid containing an alternative may be accepted but, if an award is made to that bidder, the bidder will be required to replace any alternatives which do not meet the specifications.

1. Materials and products/equipment provided under the Contract shall be new and undamaged, unless specifically specified as salvaged/refurbished/etc.

B. The burden is upon the Bidder to prove such equality. If the Bidder elects to prove such equality, the Bidder must request the Architect's approval in writing to substitute such item(s) for the specified item(s), along with supporting data, and samples, if required, to permit a fair evaluation of the proposed substitution with respect to quality, serviceability, appearance and warranty.

1. Substitution requests shall be submitted according to Section 012513 “Product Substitution Procedures”.

C. The Contractor shall furnish and install construction materials and products in accordance with the Contract Documents and the accessibility provisions of the 2021 International Codes issued by the International Code Council (ICC), including accessibility provisions in Chapter 11 and Appendix E, ANSI A117.1.

1.04 PRODUCTS

A. Products: Means raw material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection

of the Work. Products may also include existing materials or components required for reuse, if so specified.

B. Material and Equipment incorporated into the work shall:
   1. Conform to applicable specifications and standards.
   2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect/Engineer.
   3. Manufactured and Fabricated Products:
      a) Design, fabricate and assemble in accord with the best engineering and shop practices.
      b) Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
      c) Two (2) or more items of the same kind shall be identical, by the same manufacturer.
      d) Products shall be suitable for service conditions.
      e) Equipment capacities, sizes and dimensions shown, or specified, shall be adhered to unless variations are specifically approved in writing.
   4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

D. Provide interchangeable components of the same manufacturer, for similar components.

E. Reference to known ASTM and Federal Standard Specifications shall mean and intend latest edition to such specifications adopted and published to date of Notice to Bidders.

1.05 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with project construction schedules.

B. Transport and handle products in accord with manufacturer's instructions.

C. Promptly inspect shipments to assure that products comply with requirements, are in manufacturer's original containers with identifying labels intact, quantities are correct, and products are undamaged.

D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.06 STORAGE AND PROTECTION

A. Store and protect products in accord with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight, climate controlled enclosures.
   1. Prefinished materials shall arrive at job site in their original unopened cartons or other protective packaging necessary to protect finishes. Materials should be stored in such packages until time of application.
   2. Flat materials such as panels shall arrive and remain on adequate support to ensure flatness and prevent damage.
   3. Store all materials, equipment and bulk items prior to installation in clean, dry, well ventilated locations away from uncured concrete, masonry or damage of any kind. Where materials are approved for exterior storage, waterproof tarpaulin or polyethylene sheeting must allow for air circulation under covering.

B. For exterior storage of exterior materials/products:
   1. Provide substantial sloped platforms, blocking or skids to support fabricated products above ground, prevent soiling, or staining.
   2. Store loose granular materials on solid surfaces in a well-drained area, provide plywood or sheet materials to prevent mixing with foreign matter.
      a) Provide surface drainage to prevent flow or ponding of rainwater.
      b) Prevent mixing with foreign matter, refuse, chemically injurious materials, or liquids.
   3. Cover products subject to discoloration, or deterioration, from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.

C. Store all interior fixtures, equipment, materials, casework, furniture, etc., items in weathertight, climate controlled enclosures.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

F. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

G. Refer to Technical Specifications for additional storage and protection requirements.

1.07 INSPECTION AND MAINTENANCE STORED PRODUCTS

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
   1. State of storage facilities is adequate to provide required conditions.
   2. Required environmental conditions are maintained on a continuing basis.
   3. Surfaces of product exposed to elements are not adversely affected.
      a) Any weathering of products, coatings, and finishes is not acceptable under requirements of Contract Documents.

END OF SECTION 016000

SECTION 017413.23 - PROGRESS AND FINAL CLEANING

PART 1 GENERAL

1.01 SCOPE

A. Work included: Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this section.

1.02 RELATED WORK IN OTHER SECTIONS OR CONTRACTS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Divisions 00, 01, and 02 of these Specifications.

B. In addition to standards described in this Section, comply with requirements for cleaning as described in Technical Specification Sections.

1.03 STANDARD OF QUALITY

A. Conduct daily inspection to verify that requirements for cleanliness are being met.

B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

A. Provide required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

B. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

2.02 COMPATIBILITY

A. Use only those cleaning materials and equipment which are compatible with the surface being cleaned.

B. Use only those cleaning materials and methods recommended by manufacturers of the surface being cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. All cleaning materials and equipment shall be used according to the manufacturer's printed recommendations.

2.03 TRASH

A. Trash collection facilities shall be provided as specified in Section 015000.

PART 3 EXECUTION

3.01 PROGRESS CLEANING

A. General:
1. Weekly cleanups, as hereinafter specified, shall be manned by a minimum of one representative of each separate Prime Contractor, regardless of whose construction activity has resulted in the accumulation of debris. Failure by the Contractor to provide such manpower shall result in the Architect withholding monies from that Contractor's Monthly Application for Payment and/or withholding certification of the entire monthly application for payment.
2. Each Prime Contractor shall provide storage of their materials. No storage or staging of materials shall be permitted within the building or on the roof. Space for storage or staging of materials on site is limited. Contractors shall review their site staging area and material storage needs with the General Contractor and Owner; material that cannot be stored on site shall be stored off-site by the appropriate Contractor.
3. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
4. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this work.
5. At least twice each month, and more often, if necessary, completely remove all scrap, debris, and waste material from the job site.
6. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the environment.

B. Site:
1. Daily, inspect the site and pick up all scrap, debris and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often, if necessary, inspect all arrangements of materials stored on the site. Restack, tidy or otherwise service arrangements to meet the requirements of sub-paragraph 3.01 A.1 above.
3. Maintain the site in a neat and orderly condition at all times.
4. The General Contractor shall broom and/or power wash clean all existing walks and paving soiled from construction activities on a regular basis.

C. Structures:
1. Daily, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage or disposal.
2. Daily, and more often, if necessary, sweep interior spaces clean.
   a. "Clean," for the purpose of this sub-paragraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a mop.
3. As required preparatory to installing succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.
4. Floor protective coverings shall be installed by the General Contractor over new finish flooring installed under the General Contract. Floor protective coverings as specified shall be maintained in good condition until final acceptance by the Owner and Architect.
   a. Protective floor covering shall be cleaned daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.
   b. "Clean," for the purpose of this sub-paragraph, shall be interpreted as meaning free from

foreign materials which, in the opinion of the Architect, may be injurious to the finish floor material.

3.02 FINAL CLEANING

A. Final cleaning shall be executed prior to the request for final inspection per final completion.

B. "Clean", for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by professional skilled cleaners using commercial quality building maintenance equipment and materials.

C. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste.

D. Site (Work by General Contractor):
1. Remove temporary protection and facilities installed for protection of the work during construction.
2. Broom and/or power wash clean paved/surfaced areas on the site and public paved/surfaced areas adjacent to the site. Remove stains, spills or other foreign deposits.
3. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances.
4. Completely remove resultant debris.

E. Structures:
1. General Contractor shall employ a professional cleaning firm for final cleaning of interior spaces and interior/exterior window/door cleaning. Cleaning firm shall have five years documented experience and satisfactory work as indicated in submittal to the Architect/Engineer. Clean each surface until the condition expected in a normal institutional building cleaning and maintenance program is reached.
2. Exterior:
   a. Visually inspect exterior surfaces including doors and windows and remove all traces of soil, waste materials, smudges and other foreign matter.
   b. Remove all traces of splashed materials from adjacent surfaces.
   c. Clean debris from roofs, gutters, downspouts, and drainage systems.
3. Interior:
   a. Visually inspect interior surfaces, including doors, windows and glass (inside and outside), equipment, etc. and remove all traces of soil, dust, waste materials, smudges and other foreign matter.
   b. Remove all traces of splashed material from adjacent surfaces.
   c. Remove paint droppings, spots, stains, and dirt from finished surfaces.
   d. Remove specified finish flooring protection and mop hard floor surfaces or vacuum carpeted areas.
   e. Remove labels that are not permanent labels (each appropriate prime contractor shall remove labels from equipment/products installed under their contract).
   f. Clean transparent materials, including mirrors and glass, in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
   g. Wipe surfaces of mechanical and electrical equipment. Clean plumbing fixtures to a sanitary condition.
   h. Remove excess lubrication and other substances (each appropriate prime contractor shall

remove excess lubrication from equipment/products installed under their contract).

i. Electrical Contractor shall clean light fixtures and lamps.

F. Ventilating System (Work by HVAC Contractor):

1. Replace permanent filters of ventilation equipment when construction is complete; in addition, clean ducts, blowers and coils. Adjust operating products and equipment to ensure smooth and unhindered operation.

G. Refer to Technical Specification Sections of each Prime Contract for additional cleaning requirements.

H. Schedule final cleaning as approved by the Architect to enable the Owner to accept completely clean work.

3.03 CLEANING DURING OWNER'S OCCUPANCY

A. Should the Contractor re-enter an area to work after the Owner has occupied the area, then the Contractor shall be responsible for all interim and final cleaning required from the work undertaken.

END OF SECTION 017413.23

SECTION 017700 - PROJECT CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SCOPE

A. In general, the Contractor shall submit written certification that Contract Documents have been reviewed, that the Work has been inspected and completed in accord with the Contract Documents and is ready for review by the Architect/Engineer, for Substantial as well as Final Completion.

B. When the Architect finds the work acceptable under the Contract Documents, the Architect will request the Contractor make closeout submittals, including but not limited to the following:

1. Evidence of compliance with requirements of governing authorities.
2. Project Record Documents (As-Built Drawings)
3. Warranties
4. Operation and Maintenance Manuals
5. Extra Stock Materials
6. Closeout Affidavits
7. Final payment application and adjustment of Contract Sum

1.02 RELATED WORK IN OTHER SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to: All Sections in Division 00 and all other Sections of Division 01 of these Specifications.

B. Technical Specifications

1.03 CLOSEOUT PROCEDURES

A. The following closeout procedures apply per Project Phase as well as Final Project Completion. All notices, certifications, submittals, requests, etc., shall be addressed to the Architect/Engineer. Failure by the Contractor to complete the work and/or furnish submittals by the dates specified shall result in the liquidated damages as specified in Section 002000 “Instructions to Bidders” being deducted from the Contract Sum for each and every calendar day's delay.

B. Substantial Completion: Shall be as specified in Section 007216 - General Conditions, Article 9.8, and generalized as follows:

1. When the Contractor considers the work, or designated portion thereof, to be substantially complete in order to accommodate Owner occupancy, he shall submit written notice of same and attach a comprehensive list of items yet to be completed and/or corrected.
2. Upon receipt of such notice, the Architect/Engineer will make an inspection to determine the status of completion.
3. Should the Architect/Engineer determine that the work is not substantially complete:
   a. He will promptly notify the Contractor, in writing, giving the reasons, therefore.
   b. Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion.
   c. The Architect/Engineer will reinspect the work.
4. When the Architect/Engineer determines that the work is substantially complete, the

Architect/Engineer will:

a. Prepare a Certificate of Substantial Completion (A.I.A. Form G704) accompanied by Contractor's list of items to be completed or corrected within 30 days of the date of Substantial Completion, as verified and amended by the Architect/Engineer.
b. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in Certificate.

C. Final Completion: Shall be as specified in Section 007216 - General Conditions, Article 9.10, and generalized as follows:

1. When the Contractor considers the work complete, he shall submit written certification that:
   a. Contract Documents have been reviewed.
   b. Work has been inspected and completed in accordance with the Contract Documents.
   c. Equipment and systems have been tested and operated in the presence of the Owner's Representative. For equipment requiring seasonal operation, perform instructions for other seasons within six (6) months.
   d. Operating products and equipment have been adjusted to ensure smooth and unhindered operation.
   e. Instruct Owner’s Representative on maintenance of products, equipment, or systems. Use initial operation and maintenance manuals as hereafter specified as basis for instruction.
      1) Submit evidence that applicable operating instructions/demonstration have been given to Owner's personnel, refer to Paragraph 1.05.
   f. Initial Operation and Maintenance Manuals that include Air and Water Balance Reports, Valve Tag Charts, and Panel Directories where required.
   g. Work has received final cleaning according to Section 017413.23.
   h. Work is completed and ready for final review.
   i. Request the Architect/Engineer make a review to verify the status of completion with reasonable promptness after receipt of such request.
2. Should the Architect/Engineer consider that the work is incomplete or defective:
   a. The Architect will promptly notify the Contractor in writing, listing the incomplete or defective work.
   b. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to Architect that work is complete. All outstanding work shall be completed or corrected within 30 days of the date of the final punchlist issued by the Architect.
   c. The Architect/Engineer will again review the work.
3. When the Architect/Engineer finds that the work is acceptable under the Contract Documents, the Architect shall request the Contractor to make closeout submittals as follows.

D. Should the Architect perform more than one review to those listed above due to failure of the work to comply with the claims of status of completion made by the Contractor:

1. The Owner will compensate the Architect for such additional services.
2. The Owner will deduct the amount of such compensation from the final payment to the Contractor.

E. Following Substantial and/or Final Completion, in the event the Contractor fails to complete the list of items of the outstanding work instructed by the Architect to be corrected or completed within 30 days after the Substantial Completion Date and/or within 30 days of the final punchlist issued by the Architect, the Owner may (I) exercise any available remedies to correct or complete deficient work or retain a third party to correct or complete such work at the cost of the defaulting contractor, and (II) retain and deduct from any payments or retention otherwise due to the defaulting contractor any fees and expenses for

services required to be provided by the Architect more than 30 days after the specified completion date(s).

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS

A. When the Architect/Engineer receives written certification from the Contractor that final Punchlist(s) have been completed and the Architect finds that the Contractor's certification of final completion is acceptable under the Contract Documents, the Architect shall request the Contractor to make closeout submittals. All submittals shall be addressed to the Architect/Engineer, unless otherwise specified, and shall be accompanied with transmittal containing project number, title, and Contractor's name. Closeout Submittals shall be as specified in Section 007216 - General Conditions, Article 9.10.5, and as follows:

B. Submit evidence of compliance with requirements of governing authorities:
   1. Certificate of Occupancy.
      a. The Owner's receipt of an Occupancy Permit does not constitute "Completion" of the work by the Contractor. To reach "Completion", the Project must have all work completed as specified in Section 007216 - General Conditions, Article 9.8.1.1.
   2. Certificates of Inspections and/or Operating Certificates where required, including, but not limited to:
      a. Plumbing Utilities (Fire Protection, Sanitary, Water, Gas, etc.)
      b. HVAC Systems
      c. Electrical inspections
      d. Fire Marshall
   3. Compilations of On-site Construction Testing (as required by Specifications and/or IBC), including, but not limited to:
      a. Concrete
      b. Earthwork/foundations
   4. Verification of Final Adjustment of Door Hardware
   5. Inspections and/or Testing Reports shall also be submitted in electronic PDF files, formatted and bound to read/reprint the same as the hard copy.

C. Submit final bound and indexed Operation and Maintenance Manuals, including all extended Warranties and/or Guarantees issued by Contractors and/or manufacturers; manuals shall be assembled according to requirements of Paragraph 1.06. Manuals shall also be submitted in electronic PDF files, formatted and bound to read/reprint the same as the hard copy.
   1. Note: Warranties required by the Contract Documents shall commence on the date of Final Payment of the Entire Project, unless otherwise specified in Section 007216 - General Conditions, Article 9.8.4.
   2. Provide Owner with another, separate Warranty Manual for Owner's quick reference.

D. Submit Record Documents incorporating As-Built Revisions to drawings and/or specifications, including change orders, according to requirements of Paragraph 1.07. Record Documents shall also be submitted in electronic PDF files, formatted and bound to read/reprint the same as the hard copy.

E. Where surplus materials, scraps, extra stock materials, spare parts and/or maintenance materials are specified to be delivered to the Owner, submit evidence that same has been turned over.
   1. Additional material to be furnished to the Owner under the General Contract shall include but not be limited to:
      a. Tile – Section 093000.
      b. Ceiling panels – Section 095100
      c. Resilient flooring – Section 096500

2. Refer to Technical Specifications for additional items under each Contract.

F. General Contractor shall submit Keys and Keying Schedules according to requirements of Section 087100 “Hardware”.

G. Submit Final Payroll Certifications to the Owner (Forms satisfactory to Pennsylvania Department of Labor and Industry and as included in Section 007216). Submit statement that Owner has received Final Payroll Certifications. Refer to Section 007216 for weekly payroll/certification submittals.

H. Submit Contractor's Affidavit of Payment of Debts and Claims, A.I.A. Document G706.

I. Submit Contractor's Affidavit of Release of Liens, A.I.A. Document G706A.

J. Submit Consent of Surety Company to Final Payment, A.I.A. Document G707, with effectively dated powers of attorney attached.

K. Submit Application and Certification for Final Payment, A.I.A. Documents G702 and G703, according to requirements of Paragraph 1.08.

L. Certified letter stating that no Hazardous Materials have been installed on the Project as specified in Section 007216 - General Conditions, Article 10.1.5.

1.05 INSTRUCTIONS/DEMONSTRATIONS TO OPERATING PERSONNEL

A. Use initial operation and maintenance manuals as basis for instruction of products, equipment and systems to Owner’s Representative. Review contents of manual with Owner’s Representative in detail to explain all aspects of operation and maintenance. Prepare and insert additional data in final manuals for submission when need for such data becomes apparent during instruction.

B. Contractor shall coordinate with the Owner and Architect/Engineer regarding time and attendance for instructions/demonstrations. Contractor shall document all instructions/demonstrations to the Owner, submit copy of same to the Architect following instructions/demonstrations, and include copy of same in final submittals of Operation and Maintenance Manuals. Documentation shall include the following:

1. Date of Instruction/Demonstration
2. Names of Owner’s representatives in attendance and their signatures
3. Name of manufacturer’s representative presenting instructions/demonstrations
4. Name of Contractor’s representative in attendance
5. Name of Architect/Engineer’s representative in attendance, if applicable

C. Time of Instructions/Demonstrations shall not be time of testing, cleaning, or adjusting. Refer to Technical Specifications of each Contract for required instructions/demonstrations.

1. Instructions/Demonstrations to be given to the Owner’s representative under the General Contract shall include but not be limited to:
   a. Electronic hardware – Section 087100
   b. Finish Flooring – Section 096500
   c. Window Shades – Section 122400
2. Instructions/Demonstrations to be given to the Owner’s representative under the HVAC Contract shall include but not be limited to:
   a. Instrumentation and Controls (ATC/BMS)

3. Instructions/Demonstrations to be given to the Owner's representative under the Electrical Contract shall include but not be limited to:
    a. Lighting Systems & Lighting Controls

1.06 OPERATION AND MAINTENANCE (O & M) MANUALS

A. Each Prime Contractor shall prepare operation and maintenance data for building products, applied materials and/or finishes, equipment, and systems, for work under their Contract, in the form of an instructional Operation and Maintenance (O & M) Manual, with corresponding Warranties, for submission to the Architect/Engineer, as required by their Technical Specifications, and as specified hereafter.

1. Individual submittals of maintenance instruction sheets, warranties, etc., included with shop drawing submittals will only be accepted as example copies, not as final close out submittals.
2. Written Care (Operation) and Maintenance Manuals, with Warranties, required to be submitted by the General Contractor may be one comprehensive manual for the entire General Contract with all data included under separate tabs, or separate manual submissions grouped according to Specification Division (i.e., all Division 07 Roofing/Accessories/Warranties submitted in one binder and all Division 09 Finishes/Warranties submitted in another). At a minimum, the following work under the General Contract requires submission of written Care (Operation) and Maintenance Manuals:
    a. Hardware – Section 087100
    b. Finish Flooring – Section 096500
3. Where warranties are required by Technical Specifications without the submittal of O & M Manuals, these warranties may be included in the comprehensive O & M manual, and must be included in the separate "Warranty Manual", formatted similar to the O & M Manual.

B. Use initial Operation and Maintenance Manuals as basis for instruction of products, equipment and systems to Owner's Representative as specified in Paragraph 1.05.

1. Submit two (2) sets of initial manuals, unless otherwise specified. For equipment, or component parts of equipment put into service during progress of construction and operated by Owner, submit documents per Phase.
    a. One (1) copy will be returned after final inspection, with the Architect/Engineers' comments. Revise content of documents as required prior to final submittal.
2. Submit three (3) copies of revised volumes of data in final form. Final manuals shall be submitted to the Architect prior to Contractor's request for Final Payment. The Architect will forward all copies of the final O & M Manuals to the Owner.
3. Manuals shall also be submitted in electronic PDF files, formatted and bound to read/reprint the same as the hard copy.

C. Manuals shall be formatted as follows:

1. Bound in heavy-duty vinyl, 8-1/2" x 11" text page three-ring binders, 2" maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
2. Prepare binder covers with typed or printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, subject matter of contents, and volume number when multiple binders are required.
3. Internally subdivide the binder contents with tabbed fly leafs with tab titling clearly typed or printed under reinforced laminated plastic tabs for each subdivision. Include a Table of Contents for each volume. Logically organize data, subdivided by specification section, and include the following:
    a. Directory listing names, addresses, and telephone numbers of Architect/Engineer, Prime Contractor, and subcontractor(s) and major equipment supplier(s) for each product or

system. Include telephone numbers for both regular day service and night emergency service.

b. Operation and maintenance instructions by the manufacturer. Identify the following:
   1) Operating instructions for equipment and systems.
      a) Include description of unit or system, and component parts. Identify function, normal operating characteristics and limitations, performance curves, engineering data and tests, complete nomenclature, commercial numbers of replaceable parts, and wiring and flow diagrams.
      b) Panelboard Circuit Directories: Provide electrical service characteristics, controls and communications. Include color coded wiring diagrams as installed.
      c) Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions. Include sequence of operation by controls manufacturer.
      d) Local source of supplies and replacement parts
   2) Maintenance instructions for equipment and systems. Include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions. Provide servicing and lubrication schedule, and list of lubricants required.
   3) Maintenance instructions for all finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

c. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
   1) Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
   2) Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams (by controls manufacturer as installed). Do not use Project Record Documents as maintenance drawings. Fold larger drawings to size of text pages. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

d. Provide charts (index) of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

e. Where the HVAC Contractor is responsible for Testing and Balancing, include test and balancing reports (air and water). Minimum of three (3) copies of reports shall be submitted for initial review.

f. Certificates.

g. Refer to Technical Specifications of equipment and systems for additional data that may be required to be included in the operation and maintenance manual.

h. Warranties / Guarantees. (Provide Owner with another, separate Warranty Manual for quick reference, as well as, including warranties in the Operation and Maintenance Manual).
   1) Provide notarized warranties/guarantees, clearly labeled
   2) Provide the name, address and name of manufacturer, length of warranty period, how to file claim, name, address and telephone number of Contractor.
   3) Date warranties begin will be date of Final Payment to the Contractor.
   4) Extended Warranties/Guarantees to be furnished to the Owner under the General Contract shall include but not be limited to:
      a) Section 072100 Rigid Building Insulations - fifteen year Thermal Resistance
      b) Section 073100 Shingles - Specified warranty plus 2 year installer warranty
      c) Section 076200 Sheet Metal Flashing - Specified warranties plus 2 year installer warranty

d) Section 079200 Caulking – 5 year guarantee
e) Section 084113 Aluminum Window Frames – 2 year products; 10 year finish & thermal barrier
f) Section 087100 Door Hardware: Warranties as specified and/or manufacturer's standards
g) Section 088000 Glass – 10 year insulated
h) Section 089000 Louvers – 10 years
i) Section 093000 Tile Floors – 10 years
j) Section 095100 Lay-in Ceilings – 30 years
k) Section 096500:
Rubber Base - 2 years
VCT – 5 years
l) Section 100000 Corner Guards – 5 years
m) Section 102813 Mirrors – 15 years
n) Section 107316 Canopies – 10 Years Panels; 5 Years Aluminum Finish
o) Section 122400 Window Shades – 25 Years
p) Section 123216 Plastic Laminate Casework – 5 years

5) Extended Warranties/Guarantees to be furnished to the Owner under the Mechanical and/or Electrical Contracts shall include but not be limited to:
   a) HVAC Construction:
      i. Compressors – 5 years
      ii. Boiler – 10 years
      iii. ATC / BMS (controls) – 2 years
      iv. Pumps – 3 years
      v. Fabric Ductwork – 20 years
      vi. AHUs – 3 years
   b) Electrical Construction:
      i. Light Fixtures & Controls – 5 years
6) Extended Warranties/Guarantees shall include parts and labor.

1.07 PROJECT RECORD DOCUMENTS

A. As specified in Section 007216 - General Conditions, Article 3.11, Contractors shall maintain on-site, one set of the following Record Documents (for their Contract) for the Owner's records. Clearly label each document "Project Record" and record actual revisions to the Work.

1. Contract Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings and Product Data. (Note maintain two sets for the Owner as required in Section 007216 - General Conditions, Article 3.)
6. Record documents shall be kept clean, neat, and undamaged for submittal.
7. In addition to submittal of "hard" copies of all documents, Contractor shall submit "flash drive" of scanned .pdf's of all marked up documents.
8. Above submittals ARE NOT to be included in Operation and Maintenance Manuals or Warranty Manuals.

B. Store Record Documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Specifications: Legibly mark and record, at each product section, changes made by Addenda, modifications and/or selected alternate bids, as well as, changes made by product substitutions through Change Orders.

E. Reviewed Shop Drawings and Product Data: Clearly indicate the specified Product Section of each to record the actual manufacturer/product installed for each Specification Section/Item.

F. Record Drawings (As-Builts): Legibly mark one set of Contract Drawings to record actual construction including but not limited to:

1. The General Contractor shall submit as-built site plan/storm water drawings, complete with signed and sealed locations/elevations/contours as specified in Sections 312000 and 334000.
2. Measured depths of foundations in relation to finish first floor datum.
3. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
5. Field changes of dimension and detail.
6. Details not on original Contract Drawings.
7. Also refer to mechanical/electrical technical specifications for additional As-Built Drawing requirements.

G. Record Drawings (As-Builts) shall be submitted to the Architect/Engineer for review. The Architect will forward reviewed Record Drawings (As-Builts) to the Owner. Contractors shall submit one (1) set of above remaining Record Documents to the Owner and submit evidence to the Architect that said Record Documents have been given to Owner's personnel.

1. Record Documents shall also be submitted in electronic PDF files, formatted and bound to read/reprint the same as the hard copy.

1.08 FINAL ADJUSTMENT OF ACCOUNTS AND FINAL APPLICATION FOR PAYMENT

A. Submit Final Application for Payment reflecting the following:

1. The original Contract Sum.
2. Adjustments to the Contract Sum by way of additions and deductions resulting from:
    a. Previous Change Orders.
    b. Deductions for Owner’s acceptance of nonconforming work.
    c. Deductions for penalties.
    d. Deductions for liquidated damages.
    e. Deductions for reinspection payments.
    f. Other adjustments.
3. Total Contract Sum, as adjusted.
4. Previous Payments.
5. Sum remaining due.

B. The Architect shall prepare a Change Order, reflecting final adjustments to the Contract Sum which were not previously made by Change Orders, including but not limited to:

1. Deductions for Owner’s acceptance of nonconforming work.
2. Deductions for penalties.
3. Deductions for liquidated damages.
4. Deductions for reinspection payments.

5. Deductions for unit price work not required (refer to Bid Form Section 004116).
6. Other adjustments.

C. Final payment shall be made to the Contractor in accordance with the Architect's review of all submittals as previously specified herein and Section 007216 - General Conditions, Article 9.10.

END OF SECTION 017700

SECTION 024200 - DEMOLITION AND SALVAGE MATERIALS

PART 1 GENERAL

1.01 SCOPE

A. The Contractor shall provide all items, articles, materials, equipment, operations, or methods listed, mentioned, or scheduled on the Drawings and/or herein specified, including all labor and incidentals necessary and required to complete demolition work. The demolition work consists of, but is not necessarily limited to the following:

1. Protecting all trees, monuments, benchmarks and natural features of site areas designated to remain undamaged.
2. Protecting all existing building features and finishes designated to remain.
3. Certain existing materials may require removal and salvaging for re-installation. Refer to Paragraph 3.02.E for protection of materials. Materials removed and salvaged for reuse in the alteration work shall include but not limited to the following:
   a. Face Brick & Glazed Face Brick
4. Materials removed but not salvaged for reuse may remain the property of the Owner - the Owner reserves first right of refusal of all material, equipment, piping and/or fixtures. Contractor shall review all salvageable items with Owner prior to start of demolition work. Owner will instruct Contractor where selected items are to be delivered for storage on-site. All unselected items shall be disposed of by the Contractor off the site.
5. Removal of all materials as indicated on drawings.
6. Remove all rubbish, trash, junk, demolition/construction debris, etc., from the site. Do not bury or burn on site.

1.02 RELATED WORK IN OTHER SECTIONS OR CONTRACTS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Division 00 and Division 01 of these Specifications.

B. Technical specifications.

1.03 REGULATIONS

A. The Pennsylvania Department of Environmental Protection shall be notified a minimum of ten (10) days prior to start of any demolition work, even if no asbestos is present. The General Contractor shall submit said notification and pay the applicable fee. Procedures for Notification:

1. Notification may be made online through the DEP's GreenPort website via the “Asbestos Notification System (PA.GOV | Department of Environmental Protection)”.
2. Instructions are also located at DEP eLibrary (pa.gov).
3. The initial notification must include the payment stated in the instructions.
4. The Pennsylvania Department of Environmental Protection (DEP) regulates the removal, collection, transportation, and disposal of ACMs. DEP’s Air Quality Program has adopted and enforces the federal Environmental Protection Agency (EPA) 40 CFR Part 61 Subpart M, the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations, as amended on November 20, 1990.

B. If a Contractor encounters asbestos-containing materials (ACMs) during the demolition work, the Contractor shall report the condition to the Owner and Architect as specified in Section 007216 General Conditions Article 10.3. The Owner will have any demolition of ACMs removed according to NESHAP regulations. The Owner shall be permitted the time to have the presence of ACMs verified and the removal performed.

C. Obtain required approvals/permits from the appropriate authorities for material disposal off-site. Also see Section 007353.

D. The presence of lead-based paint may exist. Contractors shall perform demolition/renovation work in accordance with OSHA Regulations CFR 1926.62, as specified in Section 007216, Article 10; and per federal and state EPA regulations as follows: US Code of Federal Regulations (CFR) & Environmental Protection Agency's Title 40-Protection of Environment, Part 745-LEAD, requirements for working lead safe.

E. Where existing light fixtures are removed/disposed of by the Electrical Contractor: Fluorescent fixture ballasts or capacitors containing PCB's or other hazardous materials shall be properly disposed of as required by the Pennsylvania Department of Environmental Protection Agency.

1. All removal/demolition/transportation/disposal work of hazardous material shall be in accordance with governing regulations and laws, as well as, contacting landfills regarding procedures for disposal of hazardous materials and abiding by all waste handling requirements and documentation reporting.

F. Obtain required approvals/permits from the appropriate authorities for site work construction activities.

G. Conform to any utility company requirements when site work activities affect utility service.

H. Do not close or obstruct emergency entrances, roadways, fire lanes, sidewalks, or hydrants without approval from the Owner or his representative.

I. The Contractor shall comply at all times with applicable federal, state, and local laws, orders, provisions, and policies governing safety and health, including the Federal Construction Safety Act (Public Law 91-54), Federal Register, Chapter XVII, Part 1926 of Title 29 Code of Federal Regulations, Occupational Safety and Health Regulations for Construction, and subsequent publications updating these regulations.

J. It shall be the Contractor's responsibility to contact utility companies prior to any site construction and/or the establishment of site staging areas, as the locations of utilities shown on the plans are approximate and possibly incomplete.

1. Contractors performing excavation shall comply with Senate Bill 242 - Act 50 of 2017 Underground Utility Line Protection Law AKA PA One Call Law, Amending the act of December 10, 1974 (P.L.852, No.287, aka *PA Act 287 of 1974*).
2. Contractor shall contact Pennsylvania One Call System, call 1-800-242-1776 (PA One-Call) or 8-1-1, at least 3 business days, but not more than 10 business days prior to starting excavation.

1.04 BLASTING

A. No blasting shall be performed on the Project Site.

1.05 SUBMITTALS

A. Pennsylvania Department of Environmental Protection's "Asbestos Abatement and Demolition/Renovation Notification" form as specified in Paragraph 1.03.

B. Contractors shall submit copies of Permit(s) obtained from the PA DEP to conduct waste disposal at approved off-site locations, as specified in Section 007353.

C. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

1.05 STORAGE AND PROTECTION

A. All materials delivered to the site shall be covered with waterproof material, carefully piled off the ground in such manner as to insure proper drainage, ventilation and protection from damage and the weather.

B. All materials removed and salvaged for reinstallation shall be carefully removed so as not to damage the item and stored and covered for protection until such work is reinstalled.

PART 2 PRODUCTS

2.01 LUMBER MATERIALS

A. Dimension Lumber:
   1. Blocking and Miscellaneous Framing -
      a. Douglas Fir (WWPA) Std. or Better
      b. Southern Pine (SPIB) Std. or Better
   2. Dimension lumber shall be clearly grade marked.

B. Battens:
   1. Adequate for intended use, minimum 1/4" x 1-1/2".

2.02 ROUGH HARDWARE

A. Provide and set all rough building hardware such as spikes, bolts, nails, lag screws, lagging bolts, and anchors as called for or required to hold woodwork together or to anchor it to other material.

2.03 WEATHER PROTECTION SHEETING

A. Weather Protection Sheeting: Shall be minimum 6 mil woven poly sheeting - reinforced clear plastic. Dura Skrim 2 as manufactured by Raven Industries is acceptable.
   1. Any exterior openings left open overnight shall be enclosed with plywood sheathing and herein specified weather protection sheeting.

PART 3 EXECUTION

3.01 PROCEDURES

A. Before starting demolition:
1. Roofing system to be removed: protect all affected roof drains, etc., as per rules, regulations of authorities having jurisdiction.
2. Site operations: protect all affected storm sewers and underground utility lines as per rules, regulations of authorities having jurisdiction.
3. Building operations: Seal areas of demolition off from remainder of building; protect any existing floor drains in area of demolition, as well as, all HVAC grilles, units, etc.

B. The General Contractor shall remove all existing vegetation (vines, weeds, plants, etc.) from the perimeter of the building as well as the building's façade/envelop.

C. Contractors shall execute demolition work in a manner to ensure the existing building designated to remain, as well as any existing sidewalks, curbs, roadways, etc. designated to remain, against any damages resulting therefrom. If at any time safety of existing building designated to remain and/or roadways appears to be endangered, the Contractor shall cease operations and immediately notify the Architect and Owner, at the same time taking all necessary precautions to support such areas as may be affected. If the Architect and/or Owner considers additional bracing or shoring necessary to safeguard existing structure, the Contractor shall be responsible for installing bracing or shoring at the Contractor's expense.

D. Materials indicated on drawings to be demolished shall be completely removed from the premises unless otherwise directed by Architect and Owner.

E. During demolition operations, take necessary precautions/measures to prevent dust or dirt from rising and avoid dust, dirt and debris entering surrounding buildings. Avoid unnecessary noise.
1. See Also Section 015000.

F. The presence of lead-based paint may exist at the site. Contractors shall perform demolition work in accordance with OSHA Regulations CFR 1926.62, as specified in Section 007216, Article 10; and per federal and state EPA regulations as specified in Paragraph 1.03 above.

3.02 PROTECTION

A. Refer to Section 015000 for Site Fencing and Maintenance and Protection of Traffic requirements by the General Contractor.

B. Contractors shall maintain the existing building in a secure, weathertight condition at all times. Wall/roof openings that are exposed to the outside and unprotected are not acceptable. Construction materials shall be protected during erection to prevent the accumulation of moisture/water/windblown debris within the building construction.
1. Contractors shall provide temporary insulated weathertight closure of all exterior openings.

C. Work within the existing building: Contractors shall be responsible for protecting existing finishes, equipment, etc., designated to remain. Protection shall include but may not be limited to the

following:

1. Protect everything below the ceiling area during overhead work.
2. Cover all equipment, etc., left in place with suitable sheeting protection.
3. Cover walls with suitable means to protect existing finishes.
4. Interior protection and covers shall remain in place during entire period of work.
5. Remove coverings at completion of work. Refer to Section 017413.23 for cleaning required.

D. Contractors shall exercise caution in removing all material so as not to disturb concealed utility lines, electric conduit or structural situations not evident.

E. Existing items noted and/or required to be removed and reinstalled during the construction work shall be carefully removed so as not to damage the item and stored and protected as required until its reinstallation.

F. Repair damage done to Owner's property or any other person or persons property on or off premises by reason of required work. All existing finishes and/or features which are to remain, but are altered, damaged, or exposed due to this construction work shall be repaired to original or better condition.

3.03 REMOVAL OF EXISTING ROOFING SYSTEMS BY THE GENERAL CONTRACTOR

A. All existing roofing and related materials shall be removed from existing roof areas down to the trusses and/or deck as applicable, and surfaces prepared as required to receive the new roofing systems. Certain areas of existing roofing to be removed may consist of multiple layers of existing roof systems; existing roofing systems shall be removed complete down to existing construction as indicated. The existing wood deck at Building 'B' shall be inspected; Areas that appear defective shall be reported immediately to the Architect. The Architect will then determine the amount and type of corrective action to be taken.

1. Should the Architect determine any areas of Building 'B' existing wood deck requires removal, same shall be replaced with plywood as specified in Section 061000.
2. Prior to removal of any existing roof decks for replacement:
   a. Wherever existing roof decks are removed and replaced, all rooftop equipment located on said decks shall be removed, disconnected, re-installed, and re-connected as required.
   b. All existing materials and systems supported from said decks shall be temporarily supported by the Contractor and reinstalled/supported at completion of deck replacement, including but not limited to suspended lay-in ceiling assemblies.

B. Removal of existing roofing materials shall be done in a manner which will preserve the existing roof trusses and/or deck, as applicable, without damage caused by removal of materials.

1. Contractor shall verify electrical conduits and other possible materials (i.e., ceiling fasteners, supports, etc.) that may be fastened to deck below and possibly be damaged by installation of new fasteners and/or require removal and reinstallation during any deck replacement work. Any material altered or damaged due to the work shall be repaired to original or better condition.
2. Removal of existing roofing system(s) shall include cleaning all existing perimeter masonry/stone/concrete areas, flashings, and counterflashings indicated to remain, of all existing asphalt, caulking, mortar, etc., all substrates shall be cleaned as recommended by roofing manufacturer prior to receiving new membrane.

C. No more roofing shall be removed than can be reroofed within the same work period. The Contractor shall provide all necessary protection of the building during removal/replacement of the roofing system

against inclement weather.

1. The Contractor shall be responsible for protecting the interior of the building from rain and debris falling through roof deck during the demolition work and/or through openings during deck replacement, as well as, furnishing and installing all new materials and/or repairing materials and surfaces within the building which become damaged by debris, wind, rain, snow or other such weather related damage during the roofing work.
2. Caution: No storage or staging of construction materials shall be permitted on the roofs. All materials shall be placed to evenly distribute all loads.

3.04 REMOVAL OF EXISTING SITE SURFACES

A. General Contractor shall break up and totally remove existing sidewalks, curbs, paving, and base from areas as shown on drawings to accommodate new construction. Sawcut existing site surfaces to be tied into. Removed materials shall be disposed of off site.

B. Take measures to avoid dust, dirt and debris entering neighboring residences. Avoid unnecessary noise.

3.05 REMOVAL OF EXISTING INTERIOR CONCRETE FLOOR SLABS

A. Prior to beginning any demolition of existing interior concrete slab on grade work, the General Contractor shall assess the existing slab to determine the location of any existing utility lines (i.e., plumbing, electrical, cable, phone, etc.) that may conflict with the demolition /removal work. Potential conflicts shall be investigated and resolved prior to continuing with the demolition work.

B. Take measures to avoid dust, dirt and debris entering neighboring residences. Avoid unnecessary noise.

3.06 REMOVAL OF EXISTING FINISH FLOORING

A. All existing finish flooring materials indicated to be removed, shall be removed by the General Contractor. The General Contractor shall remove existing finish flooring, rubber/vinyl base, adhesive/mastic, and any fillers below the flooring down to the existing substrate. Note: some areas of existing finish flooring to be removed by the General Contractor may have been installed over a “soft, black” filler material; said material removal may include, but not be limited to, scraping and/or shotblasting. The General Contractor shall be responsible for the preparation of all floor substrates to receive new finish materials as specified in applicable technical specifications.

3.07 PATCH AND REPAIR EXISTING SURFACES

A. Prior to beginning any demolition, each Contractor shall assess the location of any existing utility lines (i.e., plumbing, electrical, cable, phone, etc.) that may conflict with the demolition /removal work. Potential conflicts shall be investigated and resolved prior to continuing with the demolition work.

B. Where work requires cutting/patching existing surfaces, each applicable Contractor shall replace any portion of existing floors/ceilings/walls removed to access the work with new to match existing. Work may include, but not be limited to:

1. Existing masonry walls shall be cut out as required for access and patched with “toothed-in”

masonry units to match existing adjacent units; provide a flush sound surface and final painting of concrete masonry units to match existing.

a. Provide Type "S" mortar for concrete block in exterior walls and bearing walls.
b. Provide Type "N" mortar for face brick and tuck pointing.

2. Existing concrete floor slabs: Where work requires removal/replacement of existing interior floor slabs, Contractor shall sawcut areas to be trenched/removed, then break up and totally remove existing slab debris to accommodate new construction.
   a. Provide minimum of 4" – 6" gravel under area to receive new concrete slab on grade.
   b. Provide 15 mil polyolefin film vapor barrier, as approved by Architect, over gravel base on all interior concrete slabs on grade.
   c. Provide 3000psi concrete infill.
   d. Non-Shrink Grout "Sure-Grout" by Kaufman Products, Inc.; "NS Grout" (non-metallic) by The Euclid Chemical Company; Quikrete Non-Shrink Precision Grout Product No. 1585-00; or Masterflow 713 Plus by BASF The Chemical Company.

C. Take measures to avoid dust, dirt and debris entering adjacent areas. Avoid unnecessary noise.

3.08 DEBRIS

A. Remove debris, as it accumulates from demolition operations. Do not store or permit debris to accumulate on site. If Contractor fails to remove excess debris promptly, Architect reserves right to cause same to be removed at Contractor's expense.

B. Disposal of all debris shall comply with Pennsylvania solid waste laws.

END OF SECTION 024200

SECTION 220499 – PLUMBING SCOPE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. The work to be performed under these Specifications shall include providing all labor, materials, and equipment necessary to furnish and install, complete, properly, and fully all plumbing work as shown on the Drawings or herein specified. It is the intent of these Specifications that a complete operating system be installed; this Contractor shall carefully examine the site, drawings, and Specifications, and shall include all items necessary to accomplish this purpose. The work, in general, shall include, but shall not be limited to the following:

1. Provide sanitary drainage systems as indicated. Extend sanitary sewers outside of exterior walls, for extension under the Plumbing Site Contract. Final connections by the Plumbing Contractor.

2. Provide water service as indicated. Extend water service outside of exterior wall for extension under the Plumbing Site Contract. Final connections by the Plumbing Contractor.

3. Provide a natural gas service, arranged as detailed. Extend natural gas service outside of exterior wall for extension under the Plumbing Site Contract. Final connections by the Plumbing Contractor.

4. Provide interior sanitary and vent drainage system as indicated, including floor drains, cleanouts, traps, and vents.

5. Provide interior domestic hot and cold water distribution systems as indicated. Provide valves and backflow preventers.

6. Provide interior/exterior natural gas distribution system as indicated. Provide valves, pressure regulators, and roof pipe supports.

7. Provide domestic hot water heating equipment.

8. Provide plumbing fixtures and equipment shown.

9. Provide insulation for piping and equipment as specified.

10. Provide plumbing services and final connections for equipment furnished under various Contracts or by the Owner as indicated.

11. Testing, adjusting and balancing all plumbing piping and equipment.

12. Furnish combination starter/disconnects, magnetic starters, manual starters, and fused disconnect switches, to the Electrical Contractor for installation on all plumbing

equipment. Coordinate all electrical requirements with the Electrical Contractor before ordering such equipment.

13. Type “RK” fuses for the starter/disconnect switches shall be furnished and installed under the Plumbing Contract as specified. The Plumbing Contractor shall properly size and select overloads and disconnect switch fuses in accordance with the National Electrical Code requirements. The Plumbing Contractor shall furnish to the Electrical Contractor the equipment manufacturer’s circuit protection data.

14. All control and interlock wiring shall be by the Plumbing Contractor.

15. Provide all necessary demolition of existing piping, fixtures, and equipment as indicated.

1.3 WORK BY OTHER TRADES

A. Cutting, patching, painting, electrical, plumbing, etc., shall be done by the affected trade at this Contractor’s expense for changes required in work already installed or work required by other trades for changes made by this Contractor in type or size of equipment purchased.

1.4 WORK NOT INCLUDED

A. The following construction and equipment related to the work under this Contract will be provided by others:

1. Openings in new roofs. (General Contractor)

2. Openings in new exterior walls. (General Contractor)

3. Furring around piping. (General Contractor)

4. Final painting of interior surfaces. (General Contractor)

5. Recesses and openings in construction for plumbing piping and equipment. (General Contractor) Chases for piping where specifically shown on the Drawings. (General Contractor)

6. All electric power wiring to all electrically-operated plumbing equipment. (Electrical Contractor) The Electrical Contractor will be responsible for all power wiring and associated terminations to line and load side of equipment as well as mounting of all combination starter/disconnects, magnetic starters, manual starters, fused disconnect switches, etc. furnished by the Plumbing Contractor and external to equipment they are designated to serve, except where such items are factory installed as an integral part of the equipment. The Electrical Contractor will make final connections to all equipment as directed by the Plumbing Contractor.

7. Water meter will be furnished by the Water Authority for installation by the Plumbing Contractor, with all necessary costs included in the Plumbing Contract.

8. Roof drain flashing vent flashing, and roof gas pipe flashing in all new roofs. (General Contractor) Openings, patching, restoring, and flashing in existing roof by General Contractor at Plumbing Contractor’s expense.

9. HVAC condensate drainage, except for certain condensate drain piping installed under the Plumbing Contract, as indicated. (HVAC Contractor)

10. Tapping to existing water main with main valve and valve box as indicated. (Water Authority)

11. Tapping to existing gas main with main valve and valve box as indicated. (Gas Company)

PART 2 – PRODUCTS

2.1 NOT APPLICABLE TO THIS SECTION

PART 3 – EXECUTION

3.1 NOT APPLICABLE TO THIS SECTION

END OF SECTION 220499

SECTION 220500 - BASIC PLUMBING MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 PLUMBING WORK

A. These Specifications are issued to cover all work in connection with the complete installation of the plumbing work. Plumbing work is hereby defined to include work as herein specified and as shown on the Drawings issued in connection with this project. Any reference in these Specifications to the Contractor shall hereby be considered a reference to the Plumbing Contractor. Any reference or letting of work to subcontractors or manufacturers in these Specifications does not relieve the Contractor of his responsibility for the work, materials, and equipment under this Contract. The Plumbing Contractor is responsible for the work and performance of his subcontractors.

B. The word “building” used throughout these Specifications shall be interpreted to mean the entire Building Complex.

C. The actual runs and locations of all piping, equipment, and materials shall be determined at the site and shall be installed to meet the various conditions at the building. It is, however, the Contractor's responsibility to predetermine the exact locations of piping and equipment, and to notify the other contractors accordingly and prior to any installation to avoid confliction with other piping and equipment. Any changes necessary to conceal pipes or clear pipes and equipment of other trades shall be made without additional expense to the Owner.

D. All work shall be executed and all equipment constructed and installed in accordance with the requirements of the State Department of Labor and Industry, applicable IBC Codes, the State Department of Environmental Protection, ASME, the Department of Labor, Safety and Health Regulations for Construction, OSHA, the National Fire Protection Association, the National Electrical Code as amended to date of bidding, and all applicable federal, state, county and local ordinances and regulations. Nothing contained in these Specifications or shown on the Drawings shall be construed to conflict with the aforesaid codes, ordinances, or regulations. Certificates of approval shall be obtained from any department issuing same and shall be turned over to the Owner at the completion of the work. All fees and permits required shall be satisfied and obtained by the Contractor and the cost shall be included in the Contract price.

E. The Contractor shall carefully examine the general building drawings, all mechanical and electrical drawings, and carry on his work so as not to delay or interfere with the work of other trades. The Contractor shall obtain in writing from the other contractors such data as is necessary to coordinate his work with other branches. This coordination must take place prior to any piping or equipment installation. As the work in the building nears completion, all threading, cutting, and similar work shall be done where directed by the Architect. Upon completion of the work, all remaining waste materials and rubbish resulting from the Contract work shall be removed from the building and premises.

F. Where the phrase "or approved equivalent," "or equivalent," or "approved" appears in these Specifications, it shall refer to the prior to bidding approval of the Architect/Engineer on the

material or equipment involved. Substitutions of non-named suppliers after bidding shall be summarily rejected.

G. The term "Provide" means to furnish and install. The term "Furnish", used separately, means to obtain and deliver on the job for installation by other trades.

H. The General Contractor will provide chases and openings in walls, floors, ceilings, and partitions of new construction to receive pipe piping, risers, and other equipment insofar as it is possible to predetermine the exact location, but the Contractor shall install his work sufficiently in advance of the building construction to permit his work to be built into place. The Contractor shall advise the General Contractor of the exact size and location of all chases and openings required for the installation of his work and shall check size and location of all such chases and openings provided by the General Contractor.

I. The Contractor shall furnish and place all sleeves required for pipes passing through new floors, walls and ceilings before such general construction work is built into place. The Contractor shall place all inserts required for hangers and supports, as the construction work progresses, so that unnecessary cutting of construction work will be eliminated.

J. Equipment and materials of similar types shall be of the same manufacturer unless specifically indicated otherwise on the Drawings or herein specified. The Contractor shall make final connections between all equipment furnished under this Contract and equipment furnished under other contracts, except as otherwise specified herein.

K. The materials used throughout shall be those of reputable manufacturers and shall be the best of their respective kinds. All equipment, components and materials shall be installed in a neat and workmanlike manner in accordance with best trade practices, manufacturer's recommendations, and applicable codes and standards and by persons skilled in each particular branch of the work assigned to them. All work shall be installed subject to the approval of the Architect.

L. All piping work shall be installed plumb, level, and square per code requirements. All piping shall be run in straight horizontal or vertical sections, outside of sloped drainage piping, and shall be under inspection during installation. Any piping, fittings, hangers, and/or systems deemed unacceptable per inspection during installation shall be repaired, replaced, and corrected with no additional cost to the project.

M. A complete list of materials proposed for each installation shall be submitted to the Architect for approval before delivery to the site. The Contractor shall submit samples of materials for approval at the site as requested by the Architect. Such materials may be incorporated into the structures after serving their purpose as samples.

N. Where the Contractor elects to substitute approved materials or equipment for materials or equipment specified, the Contractor will be held responsible for all architectural, structural, mechanical, and electrical changes required for their installation at no additional cost to the Owner. If additional engineering design is required, the Contractor shall reimburse the design engineer all costs.

O. The Contractor shall be entirely responsible for all apparatus, equipment and appurtenances furnished by him or his Subcontractors in connection with the work, and special care shall be taken to protect all parts thereof in such manner as may be necessary or as may be directed. Protection shall include covers, crating, sheds, or other means to prevent dirt, grit, plaster, or

other foreign substances from entering the working parts of machinery or equipment. Special care shall be taken to keep all open ends of pipes, etc., closed while in storage and during installation. Where equipment must be stored outside the building, it shall be totally covered and secured with heavy waterproof tarps and kept dry at all times. Where equipment has been subject to moisture, it shall be suitably dried out before placed in service. Rusted piping, interior or exterior of piping, will not be permitted for installation. Equipment with rusted finishes will not be permitted before or after installation. Materials and equipment shall be stored in areas designated by the Architect.

P. The Contractor or his subcontractors will not be permitted to use corridors as storage areas for their piping, materials, or equipment. Piping, materials, and equipment shall be stored in areas as coordinated with the Architect.

Q. Grades, elevations and locations shown on the Drawings are approximately correct; however, the Contractor shall field check and otherwise verify all such data at the site before proceeding with the work. The Contractor shall make necessary survey equipment available at all times and shall make use of such equipment wherever necessary to properly install his piping or equipment.

R. The Contractor shall visit the site and thoroughly acquaint himself with conditions existing at the site before submitting his proposal as will be held responsible for the installation of the work complete in every detail. The Contractor shall especially review the Architect's phasing schedule and ensure compliance with this schedule.

S. All work shown on the Drawings and not specifically included in the Specifications shall be considered a part of the Contract work. All work included in the Specifications and not specifically included on the Drawings shall also be considered a part of the Contract work.

T. Carefully examine all Drawings and Specifications included under this Contract and Drawings and Specifications included under other contracts and report any discrepancies noticed to the Architect.

U. Due to the small scale of the Drawings, it is not possible to indicate all offsets, fittings, valves, access panels, adapters, and similar parts which may be required. The Drawings are diagrammatic generally indicative of the work to be installed. The Contractor shall carefully investigate the structural and finish conditions affecting the work and arrange all work accordingly, furnishing necessary parts and equipment as may be required to meet the various conditions.

V. The Contractor shall layout his work from dimensions of Architectural and Structural Drawings and actual dimensions of equipment being installed. Layouts in congested areas should not be scaled from Plumbing, HVAC and Electrical Drawings. Clearances shall be provided on all sides of equipment as required for proper maintenance purposes and as required by the State Department of Labor and Industry.

W. The Contractor shall furnish the services of manufacturers' representatives for all equipment furnished under these Contract Documents. The amount of factory service provided by the Contractor shall be as normally recommended and furnished by the various equipment manufacturers unless specified otherwise. Testing of such systems and equipment shall be made under the direct supervision of competent authorized service representatives. Any and all expenses incurred by the equipment manufacturers' representatives shall be borne by the Contractor.

X. All equipment and materials shall be manufactured in accordance with national standards established by manufacturer's associations, engineering and testing societies, such as NBMA, NEMA, ASTM, AMCA, ASME, ANSI, ACI, FM, U.L., where such standards have been established. The standards shall be construed to mean their correct specifications and designations as amended, as of the date of bid opening.

Y. When the installation is reported in writing by the Contractor to be complete and ready for acceptance, tests and inspection shall be made by the Contractor in the presence of the Architect to ascertain whether it complies with the Specifications and Contract, and upon its failure to do so, the Contractor shall at once remedy all defects and shortcomings and any additional tests that may be required shall be entirely at the Contractor's expense. All of the testing work shall be done when and as directed by the Architect before the system is accepted.

Z. Include any excavation and backfill as required for work included under this Contract, as herein specified. Work shall conform to all applicable federal, state, county, and local regulations governing safety provisions at excavation sites.

AA. The General Contractor will install insulation with vapor barrier in certain areas of the building. Where the building insulation or vapor barrier is broken due to the installation of piping and equipment, the Contractor shall properly repair all insulation and seal all openings with vapor barrier covering and vapor barrier adhesive, of types installed with the insulation.

BB. The Architect reserves the right to revise locations of piping and equipment within the building, as long as sizes remain the same. The Contractor should include suitable allowance in his bid price for the above.

CC. In all cases where equipment and materials are specified in the singular or plural number, it is intended that such reference shall apply to as many such items as are required to complete the installation.

DD. Where piping or other equipment passes through fire or smoke barrier stops, walls, floors, or ceilings, this Contractor shall furnish and install sleeves and shall thoroughly seal openings around sleeves, pipes, and equipment with fire and smoke resistant materials. Materials shall be furnished by the Plumbing Contractor as required to maintain the fire rating of the walls, partitions, ceilings and floors in accordance with the requirements of NFPA, the State Department of Labor and Industry, and other applicable codes.

EE. All moving parts of equipment and appurtenances installed shall be properly lubricated by the Contractor.

FF. The Contractor will be responsible for the completion of all work included under this Contract and shall employ skilled and qualified tradespeople as necessary to satisfy all work and trades.

GG. All capped or plugged connections shall be suitable for permanent, gastight installations.

1.3 CODE COMPLIANCE

A. All plumbing work and materials shall comply with all applicable codes. Energy conservation shall be provided for plumbing systems as described in The International Energy Conservation Code.

1.4 ROUGH-IN

A. This Contractor shall verify roughing-in dimensions for all fixtures and equipment prior to roughing-in for such fixtures and equipment.

1.5 SHOP DRAWINGS

A. Refer to the General Conditions of the Contract, Section 3.12, “Shop Drawings, Product Data, and Samples”.

B. Refer to this section for “Required Submittals.”

1.6 RESPONSIBILITIES OF BIDDERS

A. Before ordering any material or doing any work, this Contractor shall verify all measurements at the site and shall be responsible for the correctness of same. Any differences encountered between the site measurements and those shown on the Drawings shall be submitted to the Architect for consideration before proceeding with the work.

B. This Contractor is assumed to be skilled in the trade and is solely responsible for compliance with health and safety regulations, performing the work in a safe and competent manner, and installation procedures required for the work as outlined in these documents.

C. This Contract is all-inclusive of the work indicated on the Drawings and herein specified, and no separate Contract work, supplementary labor or service will be provided by the Owner, except as otherwise noted on the Drawings or herein specified.

D. If any part of the installation specified or shown on the Drawings to be executed under this Contract requires a trade or classification of mechanics other than is normally directly employed by this Contractor, it shall be expressly understood that this Contractor shall sublet or engage mechanics experienced in each explicit trade involved to execute the work for the Contractor.

1.7 SCAFFOLDING AND RIGGING

A. This Contractor shall provide all the scaffolding required to do the work included in this Contract. All necessary precautions must be taken in high risk areas. Provide temporary rigging, as required, to install work.

1.8 DRAWINGS

A. The drawings are intended to be diagrammatic and are based on one (1) manufacturer's equipment. They are not intended to show every item in its exact location, the exact dimensions, or all the details of the equipment. The Contractor shall verify the actual dimensions of any substituted materials and equipment to ensure that they will fit in the available space. All apparatus shall be located, and all pipes run in the manner and locations shown thereon as closely as conditions will permit, and deviations therefrom shall be made only with the consent of the Architect, and without additional charge to the Owner.

1.9 TEN-DAY PRIOR APPROVAL

A. Any equipment or components proposed for this project, other than model numbers named in the bid documents, shall have pertinent submittal data and descriptive cover sheet submitted to the Architect ten (10) days prior to the bid date for inclusion in an addendum, if and when, reviewed and accepted for bidding.

B. This is for prebid review and is not to be regarded as submittals required for construction.

C. Bidder shall base the bid on items of equipment actually named in bid documents or addendums issued prior to bidding. Verbal acceptance will not be recognized unless verified in writing. It is the Bidders' responsibility to ascertain that all equipment has been accepted by requiring copies of the Architect's written acceptance from the Equipment Suppliers.

1.10 WARRANTIES

A. Warranties for plumbing work shall be one (1) year from date of final payment. Warranties shall include all parts and labor. Refer to the General Conditions of the Contract, Section 3.5, "Warranty", for more details. Certain equipment shall be warranted or guaranteed for longer than one year from date of final payment where specifically mentioned in these specifications.

B. The Contractors' warranty shall include at least two (2) inspections of the system to repair and replace any items found to be defective during this period. The first shall be approximately six (6) months after the acceptance of the system and the second at the end of the first year.

1.11 SHOP DRAWINGS AND SUBMITTALS

A. Refer to Architect's Front End for submittal requirements.

B. At the close of the job, prior to final review, five (5) bound copies of operations and maintenance (O&M) manuals shall be submitted by transmittal to the Engineer for review and acceptance. In lieu of hard copy O&M manuals, the Contractor may submit two (2) copies on CD format containing PDF files. O&M manuals, regardless of format, shall include the following:

1. Equipment warranties.
2. Contractors' warranties.
3. Parts list and manuals for all equipment.
4. Operating instructions (in writing).
5. Written instructions on maintenance and care of the systems.

C. Prior to the installation of any equipment or materials, submit shop drawings and manufacturer's data for the items listed in the Submittal Log (Attachment A) in accordance with the Contract Documents. Submittal Log (Attachment A) shall serve as the Contractor's checklist to assure the complete submission of all required shop drawings and manufacturer's data. Additionally, all equipment and materials furnished as part of this Contract shall be submitted for review regardless of whether it is listed on Submittal Log (Attachment A) or not.

D. The submissions are the Contractor's documents, and the Architect's and Engineer's review or acceptance constitutes an acknowledgment that the documents have been submitted and nothing more. It is the Contractor's responsibility to check his own submissions for compliance with the Contract Documents and job conditions.

E. Any deviations from the design documents must be clearly identified so that the Engineer may properly review such items. It shall not be the Engineer's responsibility to search out these discrepancies. If such changes are not properly flagged for the Engineer's review, the Contractor shall be completely responsible for all consequences said changes may result in on the project.

F. Submit Record (As-Built) Drawings. Refer to Paragraph 3.3

1.12 UTILITIES AND PROTECTION OF SERVICES

A. Do not interrupt any utility or service without adequate previous notice and schedule.

B. The Contractor shall, at his own expense, repair, replace and maintain in service any utilities, facilities or services (underground, overground, interior or exterior) damaged, broken or otherwise rendered inoperative during the course of construction. The material used by the Contractor shall be approved by the Architect.

C. Refer to “Excavation and Backfill” for site underground utility marking strips.

1.13 INSTRUCTIONS TO OWNER’S OPERATING PERSONNEL

A. The Contractor and his subcontractors shall satisfactorily complete the systems so that they are functional and operating to the satisfaction of the Architect. All systems, their controls and their sequencing must be demonstrated to the satisfaction of the Architect.

B. The Contractor shall furnish the services of qualified personnel, approved by the Architect and thoroughly familiar with the completed installation, to instruct the Owner’s permanent operating personnel in the proper operation of all systems included under this Contract and the proper care of all equipment and apparatus. These services shall be furnished for a period of two (2) 8- hour days after the operation of the building has been taken over by the Owner.

C. When instructions are provided under this Contract, the Contractor shall have in his possession three copies of an identifying letter which shall list the names of the Contractor’s qualified instruction personnel, including manufacturer’s representatives and subcontractors that will be giving instructions. Likewise, on the same letter, spaces shall be provided for the Owner’s personnel who will receive the instructions. After instructions have been given and received for each system, the Contractor’s representatives and subcontractors shall sign and date the letter, and the Owner’s personnel shall sign and date the letter acknowledging that they have received adequate instructions for operating and maintaining the systems and equipment. One signed copy shall be delivered to the Owner, one copy to the Architect, and one copy shall be retained by the Contractor.

D. It is the intent that the entire systems with their complement of equipment and auxiliary equipment operate properly in accordance with the design concept and functional intent. It is also the intent that the Owner be given complete instructions for the proper operation and maintenance of all systems.

PART 2 - PRODUCTS

2.1 GENERAL

A. All products shall be first-line quality, of grade and type shown on the Drawings, and specified or equivalents accepted by the Architect in writing.

B. All products shall be in current production with no notice having been given that this product is to be drastically changed, modified or discontinued from production.

C. The Supplier, by submitting, certifies that the equipment being proposed is proper for the application intended and that it has the capacity called for on the Drawings or in the Specifications.

2.2 COMPLETE SYSTEM

A. All products, materials, and accessories shall be furnished, and installed as required, for a complete system ready for the Owner's beneficial use.

2.3 EQUIPMENT AND MATERIALS DEVIATIONS

A. When any material or equipment is identified on the drawings or in the Specifications by reference to a manufacturer's name or model number; it is intended to establish a required standard of design and quality; and it is not intended to limit competition.

B. When the Drawings and/or Specifications indicate one or more manufacturers' names for materials or equipment, the Bidder may submit a bid based on materials or equipment of manufacturers not named but considered by the Bidder to be equivalent to the standard of design and quality specified; however, such substitutions must be accepted by the Architect as equivalent. If the Bidder elects to bid on a substitution without securing written consent of the Architect prior to receipt of the bids, then it will be understood that proof of compliance with the specified requirements is the direct responsibility of the Bidder, and no such materials or equipment may be purchased or installed without written acceptance.

C. Bidders are advised to ascertain such acceptance from their Suppliers by requesting copies of acceptance in writing signed by the Architect from their Suppliers.

D. Where the equipment's electrical characteristics (i.e. horsepower, wattage, voltage, amperage draw, etc.) deviate from the plumbing and/or the electrical design, it is the responsibility of the Plumbing Contractor to strictly coordinate all electrical requirements prior to submittal, to meet the specific electrical requirements without a change order. Confirmation of coordination shall be included with the appropriate submittal. No change orders shall be awarded due to lack of coordination between trades.

2.4 CONTROL WIRING

A. Furnish and install control wiring as indicated on the drawings or as specified in various portions of the specifications. All control wiring is the responsibility of the Plumbing Contractor, who provides the particular equipment, except as herein specified.

1. Power and Control wiring and conduit from all sump pump junction boxes to sump pumps shall be included under the Plumbing Contract.

2. For all packaged systems of skid-mounted equipment, the Electrical Contractor shall provide a single point power connection to the system. All associated power and control

wiring within the packaged system to equipment skid shall be by the Plumbing Contractor. Refer to drawings for specific wiring scopes of work.

B. Control wiring, in general, shall mean “low voltage” wiring, such as 24 volt, 12 volt, and 6 volt wiring, and shall include the providing of all required motor controls, relays, pilot devices, all related raceway systems, all related conductors, and all final electrical connections other than three phase power connections.

C. For 120V or 277V line voltage equipment provided under the Plumbing Contract, the Electrical Contractor will provide single phase feeders and make final connections.

D. All control wiring shall be extended in conduit. Use "plenum wire" without conduit where runs are in conditioned spaces such as relief, air conditioned, or return plenums.

E. Control wiring shall be run in conduit, and shall be copper conductors provided with Type THHN or dual rated THHN-THWN insulation and protective covering, not less than No. 12 AWG, run in accordance with the National Electrical Code; and in general, conforming to Division 26 specifications for this project.

F. Conduit above ground for control wiring shall be rigid steel conduit or electrical metallic tubing, run in accordance with the National Electrical Code; and in general, conforming to Division 26 specifications for this project.

G. Conduit below ground or below slab for control wiring shall be Schedule 40 PVC, UL rated for 90 degrees C., run in accordance with the National Electrical Code; and, in general, conforming to Division 26 specifications for this project.

2.5 VIBRATION AND NOISE CONTROL

A. Furnish and install vibration isolators, flexible connectors, and other safety measures to prevent noise and vibration from being transmitted to occupied areas.

B. Following installation, make proper adjustments to eliminate excessive noise and vibration.

C. All equipment shall operate without objectionable noise or vibrations within Noise Criteria Curves listed in Sound Control Fundamentals of the latest edition of the ASHRAE Handbook of Systems and Applications. Sound and vibration measurements shall conform to the ASHRAE Handbook of Fundamentals. If such objectionable noise or vibration shall be produced and transmitted to occupied portions of the building by apparatus, piping, or other parts of this work, any necessary changes, as approved by the Architect, shall be made without cost to the Owner. Noise levels shall conform to the requirements of OSHA.

2.6 TAMPERPROOF SCREWS

A. All screws exposed to view on plumbing equipment installed under this Contract, such as on wall access panels, fixtures and trim, floor drains, cleanouts, water coolers, and similar equipment, shall be tamperproof type. Screws shall be vandalproof slot type, Holt head, Allen head, or similar types. Phillips head screws are not regarded as tamperproof.

B. Finish of screws shall match the finish of equipment in which they are being installed.

2.7 ACCESS PANELS

A. The Plumbing Contractor shall furnish factory-fabricated access panels for access to all concealed valves, shock absorbers, air vents, traps, trap primers, strainers, cleanouts, plumbing equipment, and other items where no other means of access is available. Access panels shall be of appropriate size but not less than 18", except as otherwise noted on the drawings, flush type, hinged to drop down and out, concealed hinge and vandalproof operated spanner head cam lock, stainless steel in tile work and prime coated sheet steel in plaster or acoustical tile of all types. The Plumbing Contractor shall deliver access panels to the General Contractor for installation. Exact locations of panels shall be determined by the Plumbing Contractor, but panels shall be located for a symmetrical appearance. Access panels are not required at lift-out removable tile ceilings.

B. At locations where indirect waste access is required, access panel doors shall be louvered. Louvered panel doors shall be as manufactured by Cierra Products, or approved equivalent.

C. At locations where access panels are installed in fire-rated construction, access panels shall contain the 1-1/2 hour fire-rated "B" label; and in addition, shall also be provided with layers of gypsum wall board in thicknesses which will supply additional fire ratings equal to the fire ratings of adjacent construction.

D. Coordinate with the General Contractor on fire ratings of construction.

E. Access panels shall be Cierra Products, Acudor, or Zurn.

2.8 SLEEVES AND ESCUTCHEONS

A. The Contractor shall provide sleeves for all piping and equipment passing through walls, floors and foundations. Sleeves, in general, shall be constructed of Schedule 40 steel pipe. Space between pipe and sleeve shall be sealed with a fire stopping material. Sleeves are not required for vertical core-drilled holes (i.e. fixture drainage piping); however, openings shall be filled with firestopping. Sleeves for large sewer piping which may pass through grade beams shall be Schedule 40 PVC. Provide openings through grade beams in accordance with Architect's requirements.

B. All sleeves shall be of sufficient size to allow continuous passage of insulation where required.

C. Where pipe motion, due to expansion and contraction will occur, make sleeves of sufficient diameter to permit free movement of pipe.

D. Sleeve installations in exterior and designated interior walls, foundations and slab on grade floors shall consist of steel sleeves with the annular space between the carrier pipe and sleeve continuously filled with modular, mechanical type, inter-locking synthetic rubber links. Sleeves shall be Model WS and links, Model LS, all as manufactured by LINK-SEAL Division, Thunderline Corporation, Advance Products & Systems, Inc., or Metraflex

E. Sleeves through fire rated construction shall be sealed as specified under the "Fire Stopping" section of this Specification.

F. Escutcheons, including at fixtures, floor, wall, and ceiling plates, shall be chrome, cast brass, setscrew type. Provide "deep type" escutcheons where required to conceal connections; use split ring backup escutcheons beneath deep escutcheons for extra depth where necessary. For insulated pipes, the escutcheon shall surround the outside of the insulation.

2.9 FIRE STOPPING

A. Seal openings of fire rated construction with a material or product that has been tested at an independent testing laboratory, such as UL, FM, etc. Fire stopping shall conform to ASTM E-814, UL 1479, or UL 2079, with fire ratings equal to or exceeding the fire rating of the construction involved (Refer to General Construction Documents). Fire stopping shall be UL classified, and shall be similar to RectorSeal Metacaulk, 3M brand Fire Barrier Penetration Sealing Systems, or Hilti. Fire stopping of this type shall also be utilized for openings through smoke/fire rated construction. Refer also to applicable International Building Code Standards.

B. If desired by the Contractor and approved by local codes, the “Hydro Flame” pipe sleeving system will be acceptable, by Presealed Systems, 3M, or Hilti**.** Penetration system shall be UL certified, a water/fire stop system, tested to ASTM E814. Flame Through/F-Rating: up to 3 hours. System shall be secure, waterproof, fire rated, smokeproof, protects against gases, prevents mold intrusion, and shall allow for pipe expansion and contraction.

C. If desired by the Contractor and approved by local codes, the "Pro Set" water/fire stop piping penetration systems also may be utilized. Penetration systems shall be UL certified and shall be the "Pro Set" System A, System B, or System C, 3M, or Hilti**.**

D. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, release agents, water repellents, and any other substances that may affect proper adhesion.

E. Comply with manufacturer’s recommendations for temperature and humidity conditions before, during, and after installation of firestopping.

2.10 PROTECTION FROM NAILS, SCREWS, AND OTHER FASTENERS

A. Plastic and copper piping running though framing members to within one (1) inch of the edge of the framing shall be protected by steel plates not thinner than 16 gauge. Where such piping penetrates top plates or sole plates of the framing, the nail plate shall extend at least two (2) inches below top plates and two (2) inches above sole plates.

B. Where plastic and copper piping runs through metal framing members, it shall be protected from abrasion caused by expansion and contraction of the piping or movement of the framing.

PART 3 - EXECUTION

3.1 WORKMANSHIP

A. All work shall be performed by competent mechanics using proper tools and equipment to produce first-quality work. All work shall be neatly installed, accessible for maintenance, and complete with all accessories required.

3.2 ACCESSIBILITY

A. All equipment shall be installed in such away that all components requiring access (control operators, motors, drives, belts, valves, etc.) are so located and installed that they may be serviced, reset, replaced or recalibrated, etc. by service people with normal service tools and equipment. If any equipment or components are shown in such a position that this Contractor cannot comply with the above, the Contractor shall notify the Architect.

3.3 RECORD (AS-BUILT) DRAWINGS

A. The Contractor shall maintain a complete set of Contract Drawings at the site and shall record all deviations in his work **(in red ink or pencil**) from that indicated on the Contract Drawings. Deviations shall be clearly and accurately recorded so that the Engineer can prepare final record (as-built) drawings using the Contractor's marked-up drawings. Dimensions shall be recorded using permanent reference points such as columns, building walls and like items. As-built documents shall include all valve locations and valve tags. These record drawings shall be submitted to the Architect prior to final acceptance.

3.4 FOUNDATIONS AND SPECIAL SUPPORTS

A. For concrete bases for equipment included under this Contract, the Plumbing Contractor shall establish sizes and locations of the various bolts, together with the templates for holding these bolts in position. Anchor bolts shall be placed in steel pipe sleeves to allow for adjustment, with suitable plate at bottom end of sleeve to hold the bolt. Each piece of equipment designated to have a base shall have a concrete base of not less than four (4") inches high, which shall project four (4") inches on all sides beyond the equipment. Bases shall have greater depths of height where so noted on the drawings. Refer to "Concrete Work".

3.5 CODES, STANDARDS, AND REGULATIONS

A. All materials and workmanship shall comply with all applicable codes, federal and state laws, Specifications, local and county codes and ordinances, industry standards, utility company regulations, NFPA, and NEC. In case of a difference between codes, Specifications, federal and state laws, local and county codes and ordinances, industry standards, utility company regulations, NFPA, and NEC, and the Contract documents, the most stringent shall govern. The Contractor shall promptly notify the Architect in writing of any such difference.

B. Reference to the following codes shall mean:

REFERENCE	DEFINITION
ASTM	American Society for Testing Materials
NFPA	National Fire Protection Association
UL	Underwriters Laboratories, Inc.
NEMA	National Electric Manufacturers Association
ANSI	American National Standards Institute
IBC	International Building Code
IPC	International Plumbing Code
NEC	National Electrical Code

C. Should the Contractor perform any work that does not comply within the requirements of the applicable building codes, state laws and federal laws, local and county codes and ordinances, industry standards, utility company regulations, NFPA, and NEC, the Contractor shall bear all costs arising in correcting the deficiencies.

D. This Contractor is assumed to be skilled in the trade and is solely responsible for compliance with OSHA regulations, performing the work in a safe and competent manner, and in installation procedures required for this work. All supervision assigned to this project shall be experienced in this type of work. This Contractor's superintendent shall be designated as

Safety Inspector, unless the Contractor designates another person and notifies the Architect of this change.

3.6 PERMITS, FEES, TESTS AND INSPECTIONS

A. Refer to the General Conditions of the Contract, Section 3.7, “Permits, Fees, and Notices”.

3.7 REVIEW BY ARCHITECT

A. This Contractor shall notify the Architect at the following stages of construction so that the Architect may visit the site for review and consultation:

1. When equipment installation starts.

2. When ceiling installation will cover any work not reviewed.

3. When any piping is to be permanently concealed by construction.

4. When any piping is to be permanently concealed by backfilling of trenches.

5. When testing is started.

B. Should the Contractor fail to notify the Architect at the times prescribed above, it shall then be the Contractor’s responsibility and cost to expose any concealed piping or demonstrate the acceptability of any part of the system. Any extra cost, caused by the removal of work by other trades, shall be borne by this Contractor, at no cost to the Owner.

3.8 EARLY START-UP

A. This Contractor shall do all possible to see that the plumbing equipment is connected with electrical power as early as possible, so that final testing can be started. Should this Contractor be ready for operation and power is not available, the Electrical Contractor and the Architect shall be notified.

3.9 CLEANING AND PAINTING

A. For cleaning, refer to the General Conditions of the Contract, Section 3.15, “Cleaning Up”.

B. Where welding of pipe destroys factory pipe coating, piping shall be repainted. Any finished surfaces that have been scratched or discolored shall be touched up or repainted with paint to match the original color, to the satisfaction of the Architect. If any part has been bent, broken or otherwise damaged, it shall be replaced new prior to final review.

C. The following items of equipment and piping being furnished under this Contract shall be prime coated and finish painted by the Plumbing Contractor. Painting shall be in strict accordance with the requirements and recommendations of OSHA.

1. All equipment and piping installed outside the building exposed to weather, including on roof areas. Colors shall be as selected by the Architect. Finish paint cast iron roof drains of color selected by the Architect.

2. All non-galvanized and unpainted support steel, brackets, hangers, and other miscellaneous metals, including in crawl spaces, tunnels, walkways, above ceilings, loft spaces, prefabricated floor trenches, mezzanine spaces, and accessible pipe spaces.

D. Insulated piping is not required to be painted, unless requirements provided by the Owner and Architect. All Piping shall be painted in accordance with Owner and Architect requirements. Coordinate painting procedures and requirements prior to bidding. Painting of piping may include, but not limited to, the following:

1. All insulated piping and equipment exposed to public view.

2. All uninsulated piping in Mechanical Equipment Rooms.

E. Surfaces required to be finished painted shall be painted as follows:

1. All uninsulated piping shall be painted with one (1) coat of rust inhibitive red primer and one (1) coat of gloss enamel.

2. All other ferrous metals shall be painted with one (1) prime coat of equipment and machinery primer and one (1) finish coat of gloss enamel.

3. Coated cast iron or coated black steel piping need not be painted above ceilings; however, rusted or scraped piping shall be touched up, to keep a like new finish.

4. All galvanized surfaces shall be painted with one (1) prime coat of galvanized steel primer and one (1) finish coat of gloss enamel. All aluminum surfaces shall be painted one (1) prime coat of aluminum primer and one (1) finish coat of gloss enamel. Paint shall be of types specifically made for these surfaces.

5. All other copper and brass surfaces shall be painted with one (1) prime coat of zinc chromate primer and one (1) finish coat of gloss enamel.

F. Color code and/or label all natural gas piping per Gas Company's and/or Owner/Architect's requirements.

G. Paint shall be of colors selected by the Architect.

H. Finish paint color samples shall be submitted to the Architect for approval.

I. Paint shall be as manufactured by Glidden, PPG, Rust-Oleum, or Sherwin-Williams

J. All painting shall be done in a careful, neat and workmanlike manner with particular care being exercised to protect building equipment and finishes. All surfaces shall be thoroughly cleaned of rust, scale, dirt, grease, dust, and like items, and sanded so as to provide bond for new paint. The Contractor shall be entirely responsible for cleaning all surfaces and should evidence appear to the Architect that the surface was not properly prepared, the Contractor shall remove paint, prepare surface and repaint as required at no additional cost.

K. The Contractor shall be responsible for painting his piping and equipment installed in finished areas after these areas have received finish painting by the General Contractor or in areas where the General Contractor is not painting.

L. Refer to “Plumbing Identification”, Section 220553, for stenciling and labeling.

3.10 FINAL CONNECTIONS

A. All equipment noted as furnished and installed by other contractors or by the Owner, that requires plumbing services, will be furnished and installed complete with trim by that party, except as herein specified. The Plumbing Contractor shall coordinate type and location of equipment, rough-in services noted or required and make final connections. Final connections shall include items such as drain tailpieces, “P”-traps, running traps, water, air, and gas shut-offs, interconnecting piping extensions, piping within and around cabinetry, combination waste assemblies where required, piping adapters, and like items.

3.11 MAINTENANCE

A. Contractor shall be responsible for maintenance of all equipment and apparatus included under this Contract until final project completion.

3.12 PLUMBING PLANS

A. The plumbing plans are intended to be diagrammatic and are based on one (1) manufacturer’s equipment. They are not intended to show every item in its exact location, the exact dimensions, or all the details of the equipment. The Contractor shall verify the actual dimensions of any specified or substituted materials and equipment to ensure that they will fit in the available space. All apparatus shall be located as closely as conditions will permit and deviations therefrom shall be made only with the consent of the Architect and without additional charge to the Owner. The right is reserved by the Architect to make any reasonable changes in the location of the equipment prior to rough-in without invoking additional expense to the Owner.

3.13 QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS

A. **Bidders shall not rely on any verbal clarification of the drawings and specifications. Any questions or clarifications shall be referred to Engineer at least seven (7) working days prior to bidding to allow for issuance of an addendum.**

3.14 CHANGE ORDERS

A. If change orders are not justified or rejected repeatedly by the Architect and the Owner, the Contractor shall be required to reimburse the Architect and the Engineer for time spent in excess of eight (8) hours to review change orders that are not justified.

3.15 SUBSTITUTIONS

A. Throughout the Specifications, types of materials may be specified by manufacturer's name and catalog number in order to establish standards of quality and performance and not for the purpose of limiting competition. Unless specifically stated otherwise, the bidder may assume the phrase "or approved equivalent," except that the burden is upon the bidder to prove such equality. If the bidder elects to prove such equality, he must request the Architect's approval in writing to substitute such item for the specified item, and shall submit supporting data, and samples if required, to permit a fair evaluation of the proposed substitution with respect to quality, serviceability and warranty. All data pertinent to the proposed substitution shall be submitted to the Architect at least 10 days prior to the bid date for evaluation and review

purposes. If the Architect accepts the proposed substitution, an addendum will be issued to all bidders advising all bidders that this substitution will be acceptable from all bidders.

B. Substitutions of equipment other than that specified must be very carefully checked to assure that no problems will occur due to dimensional differences, code requirements, connection points, weights, etc. Where the Contractor elects to substitute materials or equipment approved by the Architect for those specified, the Contractor will be held responsible for all architectural, structural, mechanical, and electrical changes required for the installation of the substituted materials at no additional cost to the Owner. All tests required to substantiate the equivalence of the material will be the obligation of the Contractor.

C. When this Contractor desires to furnish equipment of a manufacturer other than that specified or intended, he shall include a complete specification of the substituted item, along with each submission copy of shop drawings, indicating the necessary modifications to the substituted product to satisfy the requirements of the Contract Specifications. Manufacturer's specifications shall be written as close as possible over the Contract Specifications and each paragraph shall bear the same paragraph number as the Contract Specifications so that close comparison can be made. All submissions will be rejected should they not include the comparison specification. Comparison specification shall be submitted for approval 10 days prior to the Bid Date. If prior approval is not obtained, no substitutions will be considered and the Engineer reimbursed for time spent to reject and return such submission.

D. The verification specification shall include the exact wording of the Contract Specification and the revised wording identified properly indicating all the deviations proposed. If no deviations are noted, the Contractor must furnish the material or equipment in accordance with the Contract Specifications.

E. Should the Contractor elect to propose a substitution after the project has been awarded, the Contractor will be billed for the time spent by the Architect and his consultants in evaluating the proposed substitution. This billing shall occur whether the proposed substitution is accepted or rejected and shall be at the rate of the direct cost to the Architect times a 2.5 multiplier.

F. The submissions are the Contractor's documents, and the Architect's and Engineer's approval constitutes an acknowledgment that the documents have been submitted and nothing more. It is the Contractor's responsibility to check his own submissions for compliance with the Contract Documents and job conditions.

3.16 COORDINATION FOR CONTRACTORS

A. Actual location of pipe and equipment shall be determined at site. IN GENERAL, ROUTINGS OF THE HVAC CONTRACTOR SHALL TAKE PRECEDENCE. Contractor shall confer with other contractors as to locations of pipes, ducts, electrical and equipment provided under their contracts, before erecting any work. In case of confliction, the Architect shall have the final decision, with no cost to Owner.

B. Contractor shall furnish Electrical Contractor information on electrical requirements of equipment provided under Contract. Equipment connections shall be made in neat and workmanlike manner, placing equipment in proper operating condition, with provisions for maintenance or replacement. Equipment manufacturer's recommendations shall be followed for final connections.

3.17 FLASHINGS

A. The General Contractor will furnish and install all new roof flashings for roof drains and vents. Roof gas pipe flashing will be completed in a similar fashion. The Plumbing Contractor shall provide wall and floor flashings as specified. All existing roof flashing shall be under this Contract.

B. For interior floor drain installations and concrete slab concealment in above-floor slab locations, epoxy concrete grout shall be used as manufactured by Nor-Mar Enterprises, F-101 Ease-A-Crete, or approved equal. Refer to Drawing Details.

3.18 EXCAVATION AND BACKFILL

A. The Contractor shall do all necessary excavation and backfill required for the proper installation of work under the Contract. Refer to Section 312000.5, “Earthwork”; Section 321216.5, “Paving”; and Section 329200.5, “Seed”.

3.19 SPECIAL ENGINEERING SERVICES

A. In the instance of Mechanical and Control systems, such as all major and special equipment, controls, or similar miscellaneous systems and equipment, the installations, final connections and testing of such systems shall be made under the direct supervision of competent authorized service engineers who shall be employed by the respective equipment manufacturer and/or an authorized representative. Any and all expenses incurred by these equipment manufacturers' representatives shall be borne by the Contractor.

3.20 TESTS AND ADJUSTMENTS - GENERAL REQUIREMENTS

A. The Contractor shall furnish all labor, material, and equipment necessary for performance of all tests required by any of the agencies having jurisdiction. Testing procedures shall be outlined hereinafter under the respective sections of these specifications.

B. All tests shall be conducted in the presence of the Architect. No piping shall be concealed until the system has been approved.

C. At the completion of the work, all equipment, valves, fixtures, fixture trim, mixing valves, regulators, hose bibbs, wall hydrants, sprinkler heads, etc., shall be adjusted for proper operation.

D. The Contractor shall obtain certificates of approval, acceptance and compliance with regulations of all agencies having jurisdiction. Work shall not be deemed complete until such certificates have been delivered to the Architect.

3.21 EQUIPMENT GUARDS

A. Equipment guards shall be provided for protection at all belts, chains, gears, or other moving parts of equipment and machinery installed under this Contract. Guards shall be made up of suitable structural shapes and heavy gauge steel welded together and attached to equipment by removable clips and bolts. Guards shall be neat and substantial and shall be securely attached to equipment. After fabrication, guards shall be cleaned of rust and scale and painted with one coat of metal primer followed by one coat of enamel to match the equipment. Guards shall be easily removable for maintenance and service of equipment. All equipment guards shall conform with ANSI/OSHA requirements.

3.22 CONCRETE WORK

A. Furnish and install all concrete work related to work included under this Contract. Refer to "Concrete", Section 033000.5, "Cast – In-Place Concrete". Construct concrete forms and bases for the equipment installed under this Contract. Bases and forms shall be of suitable dimensions for all equipment. All concrete work shall be constructed subject to the approval of the Architect. Provide all concrete for repair work related to work included under this Contract.

3.23 MISCELLANEOUS IRON WORK

A. Furnish and install all miscellaneous iron work including, but not limited to, piping hangers, piping anchors and guides, and all other equipment supports. All additional structural members shall be furnished and installed to support equipment without excessive stress or strain on the building construction. Structural beams and other structural members shall be furnished and installed under this Contract where the building steel is not available or capable of supporting or anchoring pipe piping and equipment.

B. All equipment and materials furnished and installed under this Contract which are not mounted on bases or floors shall be securely attached and supported from the main supporting structure of the building by metal hangers, clamps and/or brackets. Metal hangers, clamps and/or brackets shall be of suitable design and of sufficient strength to properly and safely support the materials and equipment involved. Lag screws and bolts shall be used where required at wood construction.

C. Materials - Structural steel members for the support of equipment installed under this Contract shall conform to ASTM Specifications A-36 and shall comply with the latest requirements of the American Institute of Steel Construction. Structural steel shall be of standard sections as given in the structural steel manufacturers' handbooks.

D. Priming - All steel and iron work shall be primed with Rust-Oleum red primer, Glidden, PPG, Sherwin-Williams, or approved equivalent. Before priming, all metal shall be thoroughly cleaned free from scale, rust, and dirt.

E. Anchors - The Contractor shall provide all anchors, bolts, screws, dowels, and connecting members and do all cutting and fitting necessary to secure the work to adjoining construction. Build in connecting members to masonry, concrete, and structural steel as the work progresses.

F. Supports and Brackets - Supports and brackets shall be neatly constructed of structural shapes to adequately support the equipment intended. All supports must be approved prior to installation. Field conditions will regulate the type of support.

3.24 COORDINATION DRAWINGS

A. Coordination

1. Each Contractor shall familiarize himself with the drawings and specifications of the other contracts relating to this project and shall coordinate with, and be held responsible for his Work which is affected by or dependent on, other contracts.

2. Each Contractor shall provide any dimension, coordination, sleeve, insert, embedded or

built-in item, and/or information which is required to be built into, or to complete, the work of another contract in a manner consistent with the Approved Project Schedule. Any additional cost or delay damages arising from a contractor's failure to so furnish or provide shall be borne by that contractor.

B. Coordination Drawings and Procedures

1. Each Contractor shall prepare composite shop drawings and field installation layouts for his work as directed by the Architect to solve tight field conditions except as modified in Paragraph 3 below. Such drawings shall consist of dimensioned plans and elevations and shall give complete information, particularly to size and location of sleeves, attachments, openings, conduits, ducts, boxes and structural interferences.

2. These composite shop drawings and field installation layouts shall be coordinated in the field among the Contractors to verify the proper relationship to the work of other Contractors based on field conditions, and shall be checked for accuracy and approved by the Contractors as directed by the Architect before submission to the Architect for his final approval.

3. HVAC, Plumbing, Fire Protection and Electrical Work shall be coordinated as indicated by the following procedure. Each Contractor shall sign each coordination drawing after the work has been laid out and conflicts resolved. The preparation of coordination drawings and layout Work on the coordination drawings shall be performed at the site by each Contractor.

   a. The HVAC Contractor shall prepare a CAD drawing of each area, at a scale of ¼" inch equal 1'-0", showing his work plan and elevation. The HVAC Contractor shall layout and show light fixtures on the drawings.

   b. The CAD Drawings referred to in 3. a. above shall then be forwarded to the next succeeding Contractor for layout of their work in the field in the following order; (a) PLUMBING AND FIRE PROTECTION; (b) ELECTRICAL; (c) INTERIOR CONSTRUCTION.

   c. By use of color coding, and layering each succeeding Contractor shall show his work on the referenced CAD Drawing and shall sign same to indicate his satisfaction that there is no interference between his work and that of other Contractors. Colors will be assigned by the Heating Contractor.

   d. When the work has been shown and signed off, the HVAC Contractor shall forward each CAD Drawings to the Architect, for review and approval. Copies of approved CAD drawings shall be distributed to the contractors, Architect, and the Owner by the Heating Contractor

   e. The color coded transparency shall be kept at the Architect's field office for future reference in the event of conflict between the trades. At the completion of the project, all color coded transparencies shall be delivered to the Owner for his records.

   f. Coordination drawings shall be completed within 30 days of start of Contract. No installation work will proceed until EACH contractor has signed off and agreed to the coordination drawings.

C. Meetings

1. Coordination meetings to resolve interferences in the Work will be held at the site in an area to be provided by the Architect. Representatives of each Contractor shall be present at each meeting. Each Contractor shall provide the necessary resources to insure that the coordination process described herein does not delay the Approved Project Schedule.

D. Each Contractor acknowledges that there may be items of Work which have not been drawn, coordinated, clarified or specified with complete detail in the Contract Documents but which are required for the completion of the Work, as inferable from the Contractor Documents. Any such item, when identified as part of the development of the Work, shall be drawn, coordinated, clarified or specified by the Architect in a manner consistent with contemplated kind, quality and customary standards and provided to the Contractor. When such drawing, coordination, clarification or specification is approved by the Owner, the drawing, coordination, clarification or specification so approved shall thereupon be part of the Contract Documents and the item of Work shall be performed by the Contractor as part of the Work without further action or order of the Owner and without any increase in the Contract amount or time as if such drawing, coordination, clarification or specification were originally included in the Contract Documents.

3.25 MERCURY PROHIBITION

A. The use of mercury as a component of any equipment installed as part of this work is strictly prohibited. Mercury substitutes shall be used in thermometers, switches, and other equipment, which might commonly contain mercury.

3.26 ACOUSTIC SEALING

A. Seal openings of acoustic-rated ceilings, walls, floors, or other construction, or acoustic area separation requirements with a material or product specially made for these types of applications. Acoustical sealants shall be as manufactured by Arcat, Inc., Acoustical Surfaces, Inc., or American Acoustical Products. Refer to Architectural Drawings for acoustic sealing locations required.

3.27 CLEARANCE REQUIREMENT

A. Ceiling areas directly below heating equipment must be kept clear of all piping, conduit, and other utilities, to allow for unit access for servicing and/or removal.

END OF SECTION 220500

Submittal Log (Attachment A)

Project Name: _____

CJL Project No.: _____ **Trade:** _____

Engineer's Review: A = Reviewed, B = Rejected, C = Furnish as Corrected, D = Comments Attached

Contractor's Required Response: E = Confirm, F = Resubmit

No.	Specification Number	Description	Manufacturer	Date Received	Action Taken	Date Returned
	220500	O&M Manuals				
	220500	As-Built Drawings				
	220500	Pipe Specialties (Fire Wrap, Access Panels, etc.)				
	220523	Domestic Water Valves				
	220523	Domestic Hot Water Return Balancing Report				
	220529	Plumbing Hangers and Supports				
	220553	Plumbing Identification Labels				
	220700	Plumbing Insulation				
	221116	Domestic Water Piping and Fittings				
	221116	Domestic Water Pipe Accessories (strainers, gauges, etc.)				
	221124	Natural Gas Piping and Fittings				
	221124	Natural Gas Valves				
	221124	Natural Gas Regulators				
	221300	Manholes / Catch Basins				
	221300	Utility Piping of all types				
	221300	Meter Vault				
	221300	Utility Site Valves				
	221316	Sanitary and Vent Piping and Fittings				

Submittal Log (Attachment A)

Project Name: _____

CJL Project No.: _____ **Trade:** _____

Engineer's Review: A = Reviewed, B = Rejected, C = Furnish as Corrected, D = Comments Attached

Contractor's Required Response: E = Confirm, F = Resubmit

	221316	Sanitary Drains of all types				
	221316	Sanitary Cleanouts of all types				
	221316	Trap Primers / Trap Seals				
	223300	Domestic Water Heaters & Accessories				
	224000	Plumbing Fixtures and Trim – Complete				

SECTION 220510 – PLUMBING RESTORATION AND RETROFIT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK IN PRESENT BUILDING AND AT THE SITE

A. All work shall be coordinated with the work of other trades and shall be performed in accordance with the Schedule of Work of the General Contractor and as required by the Architect and the Owner.

B. The General Contractor will remodel the Present Building in all areas shown on the Drawings. The Plumbing Contractor shall refer to the general construction drawings to determine the extent of the remodeling in each area. The Plumbing Contractor shall disconnect and remove existing plumbing no longer required and furnish and install new plumbing as shown, herein specified and as required to form complete new systems. Plumbing removal shall include existing fixtures, equipment, piping, insulation, supports, hangers, structural supports, concrete pads, bases, foundations, piers, and like appurtenances or accessories unless noted or required to remain as part of the remodeled system.

C. The Contractor shall visit the site to determine exact locations, sizes and quantities of present equipment and piping which must be removed or connected thereto. The Plumbing Contractor will be held responsible for the complete disconnection and removal of all existing systems and the installation of all new piping and equipment complete in every detail. The Contractor shall provide “Demolition/Renovation Notification” as required by the Pennsylvania Department of Environmental Protection, Bureau of Air Quality Control.

D. All domestic water branch piping shall be disconnected and removed as noted on the drawings and shall be removed in their entirety, back to the water main. Cap existing connection fittings in main, or cap existing branch valving if existing valves are approximately 6” from mains.

E. Existing piping no longer required and concealed in walls, below floors, or above fixed ceilings and not interfering with new construction or remodeled work may remain and shall be capped, abandoned and rendered “dead”. All water piping, drain piping, and other piping systems exposed to view as a result of related work under this Contract shall be disconnected and removed, or relocated. Cap or plug existing water, medical gas, drain, and other lines as necessary to keep lines or equipment in operation.

F. The Contractor shall arrange the new hangers and supports so that new piping and other equipment are not suspended from the same joists and structural members as present piping and equipment. Hangers and supports shall be arranged to distribute the weight of the new piping and equipment uniformly on the present structure. Additional new structural members shall be furnished and installed as necessary to safely support the new piping and equipment. After equipment or piping is removed, existing remaining equipment or piping shall be properly supported.

G. At certain locations, existing piping and equipment shall be disconnected and removed, and new piping and equipment shall be furnished and installed under this Contract above existing

ceilings. The Plumbing Contractor will be responsible for restoring the existing ceilings (and grid work) to their present condition where they are removed or damaged by the work included under this Contract, and when the ceilings are not being replaced with new ceilings by the General Contractor. Plumbing Contractor shall temporarily remove existing ceiling tile and grid work, and upon completion of the Contractor's work, the Contractor shall reset ceiling tile and grid work, replacing damaged tile/grid work in kind. The Plumbing Contractor shall also be responsible for repair work to all existing remaining ceilings, as required to maintain the fire ratings of the existing ceilings.

H. The Contractor shall clean up the areas as the work progresses and remove all waste and debris daily or when directed. Immediately remove water present in the area resulting from the work.

I. The Contractor shall perform all cutting and patching required for installation of new piping and equipment, and for the removal of present piping and equipment as herein specified. Cutting of concrete work shall be completed by the "saw-cut" method, or shall be core drilled. Certain cutting and patching will be performed under the General Contract as specified under "Work Not Included". The Plumbing Contractor shall be responsible for maintaining the structural integrity of the Existing Building where areas such as load bearing walls, roofs, and floor construction are patched and repaired under this Contract. All patching shall be done subject to the approval of the Architect. The Plumbing Contractor will be responsible for entrance of all new equipment into the building, and for the removal of existing equipment from the building, and for the related cutting, patching and repairing of existing construction.

J. Existing removed fixtures, fixture trim, flush valves, other valves, fixture carriers, wall hydrants, floor drains, hose bibbs, water heating equipment, copper piping and tubing, and other similar useful equipment and materials tagged by the Owner shall remain the property of the Owner and shall be loaded, handled, unloaded, and stored at the site by the Contractor where directed by the Owner and Architect. Equipment shall be stored as complete units with all associated accessories and auxiliary equipment. Equipment shall be disconnected and carefully removed under this Contract and shall be transported to the storage areas as directed. Equipment shall be stored in a neat and workmanlike manner, tagged and identified for future use. Equipment not desired by the Owner shall become the Contractor's property and shall be immediately removed from the site.

K. Removed other piping, fittings, hangers, insulation, traps, toilet seats, structural supports, and other miscellaneous materials and equipment no longer required, or desired by the Owner, shall not be reused as part of the new installation, but shall become the property of the Contractor and shall be immediately removed from the site. The Plumbing Contractor shall give due consideration and credit in his proposal for present materials and equipment which will become his property. Existing removed equipment remaining the property of the Contractor shall be dismantled and cut in sections as required for removal from building.

1. Existing removed water or gas metering or regulating equipment shall be transported and returned to the respective utility companies. Coordinate all such work with the utility companies.

L. Provide and later remove temporary piping services and equipment as required to keep systems operating during construction.

1.3 REMOVAL AND DISPOSAL OF HEALTH HAZARDOUS MATERIALS

A. All asbestos removal work will be performed by a contractor prior to the start of this construction.

B. This Contractor shall immediately report the presence of any asbestos to the Architect. No asbestos removal or disposal is to be included under this Contract.

1.4 CUTTING AND PATCHING – NEW CONSTRUCTION

A. All openings or chases required for the installation of the work in the building will be provided by the General Contractor, providing this Contractor notifies the General Contractor of the size and location of the required openings or chases in sufficient time before the work is closed in, so that the work of the General Contractor will not be delayed.

B. If this Contractor fails to notify the General Contractor in sufficient time, this Contractor shall cut, patch, finish, and paint the openings at his expense.

C. This Contractor shall set all sleeves, hangers and anchors required for his work and shall be responsible for their proper and permanent location.

D. This Contractor shall seal all openings he has utilized in fire rated floors, ceilings or partitions after his work has been installed. The material used for sealing the openings shall have a fire rating equal to or greater than the rating of the floor, ceiling or partition material.

1.5 CUTTING AND PATCHING – EXISTING CONSTRUCTION

A. The Contractor shall do all cutting and patching for the removal of existing piping and equipment and the installation of new piping and equipment in the Existing Building. Certain cutting and patching will be performed under the General Contract as specified under “Work Not Included”. Also, coordinate all work with “Cutting and Patching” as outlined in Architectural Sections.

B. New openings in roof, interior and exterior walls, floors, ceilings, and partitions for piping, hangers, supports, and other equipment in the Existing Building shall be provided by this Contractor for the new and remodeled installation. New openings in the existing construction and repair of such openings for the entrance of new plumbing equipment into the building or for the removal of plumbing equipment from the building shall be included in the Plumbing Contract. All cutting and patching required for existing roof work shall conform to the Roof Bonding Agency’s requirements. Contact the Agency for provisions regarding the work. Openings in existing roof shall be the responsibility of this Contractor. Openings and patching in existing roof will be completed by the Roofing Contractor at the Plumbing Contractor’s expense. Patch all fireproof roof deck penetrations.

C. Wherever it becomes necessary to cut out any portions of roof, interior and exterior walls, floors, ceilings, or other portions of the building as may be required to perform the work under this Contract, the Contractor shall do all necessary cutting and patching, shall remove all excess material, and shall replace all damaged work, so as to leave the premises in a finished condition. No cutting shall be done which may in any way affect the building structurally or architecturally without first securing the consent and approval of the Architect. Any damage incident to cutting or other causes in the performance of this Contract shall be made good by replacement or repairs in a manner satisfactory to the Architect. The Contractor must use extra precaution so as not to disturb the bearing quality of existing walls or other construction.

D. Where present equipment is removed and unused openings remain in roof, walls, floors, ceilings, partitions, etc., the Plumbing Contractor shall properly patch all such openings to match their immediate surroundings, unless specifically shown to be included under the General Contractor's scope of work. Openings remaining in exterior brick construction shall be patched with matching brick, not just masonry concrete or cement, as directed by the Architect.

E. All patching and repairing shall be done by workers skilled in this type of work and shall identically match present or new finishes. If identical materials are not available or cannot be used for existing construction, use substitute materials that match existing materials to the fullest extent possible with regard to visual effect and performance.

F. All cutting performed under this Contract shall be done in a neat and workmanlike manner. The size of each new opening shall be kept to minimum size. The location of each new opening must be approved by the Architect before the opening is drilled or cut.

G. Where existing ceilings and walls and similar construction are penetrated for the installation of new hangers, supports, and other equipment, the Contractor shall repair the openings with fireproof materials to maintain the fire rating of the ceiling or wall construction, or similar construction.

H. The Contractor's attention is directed to the Architectural Drawings to determine areas in which the General Contractor will perform extensive remodeling work. All cutting and patching shall be directly coordinated with remodeling work performed under the General Contract. This Contractor shall cooperate with the General Contractor in every manner in making the installations.

I. Patching and repairing shall be done to match present construction and finishes in materials, color, and texture. Painting shall be as herein specified. All cutting, patching, repairing, and painting shall be performed by workers skilled in that type of work. All patching shall be completed to a neat, finished condition. Where the General Contractor applies new finishes, except painting, on existing walls, floors, ceilings, and similar locations, it will not be necessary for the Plumbing Contractor to apply finished patching and painting to the remodeled surfaces; however, the Contractor shall rough patch the areas for the final finish. Where the existing areas are to be repainted by the General Contractor, the Plumbing Contractor must repair his openings and provide a prime coat and one finish coat of paint to be ready for the General Contractor's final coat of paint. The Contractor's attention is directed to the General Construction Drawings to determine exact locations where new finishes on walls, floors, ceilings, and similar locations will be provided under the General Contract. There will be many areas where the General Contractor is not performing any work. The Plumbing Contractor shall repair and finish all openings where the General Contractor is not providing new finishes. When providing final painting of patching areas, entire wall or ceiling shall be painted corner to corner and top to bottom so that the entire wall or ceiling is painted. Paint shall be good quality type, as manufactured by Glidden, Sherwin-Williams, PPG, or approved equivalent.

1.6 DUST, DIRT, AND NOISE

A. The Contractor shall do all cutting and patching and shall make all changes, relocations, and installations with a minimum of noise.

B. All present and new equipment, floors, walls, etc., shall be adequately protected from dust and dirt caused by the work. Protection shall include suitable temporary barriers or coverings. The exterior and interior premises of the building shall be kept as clean as possible during

construction. At no time shall the Contractor interfere with the normal operation of the building by allowing debris, etc., to remain on the premises. The Contractor shall use industrial type vacuum cleaners for removal of plaster, dust, etc. in the Building.

1.7 SCHEDULE OF WORK AND CONTINUITY OF SERVICE

A. It is the Owner's desire to maintain the operation of the existing building with a minimum of disruption; therefore, the Contractor shall closely coordinate the scheduling of his work as well as equipment deliveries with the Schedule of Work prepared by the Architect. The schedule of work may be revised periodically during the course of construction, but each revised schedule must be approved by the Architect.

B. When it becomes necessary to interrupt any part of the operation of the plumbing system or fire protection system, the Contractor shall notify the Architect and Owner five (5) working days in advance of the proposed interruption. The plumbing system or fire protection system shall only be interrupted when absolutely necessary and at a time to conform to the Owner's schedule.

C. Long interruptions of the plumbing system, due to faulty workmanship or improper scheduling of work will not be tolerated.

PART 2 – PRODUCTS

2.1 NOT APPLICABLE TO THIS SECTION

PART 3 – EXECUTION

3.1 NOT APPLICABLE TO THIS SECTION

END OF SECTION 220510

SECTION 220523 – DOMESTIC WATER VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The valves for the domestic water systems shall be as hereinafter described in this section.

B. Lead Free: Refers to the wetted surface of pipe, fittings and fixtures in potable water systems that have a weighted average lead content ≤ 0.25% per Safe Drinking Water Act as amended January 4th 2011 Section 1417. Valve requirements to meet all State and Local requirements.

C. For exterior underground utility valves, refer to Section 221300.

1.3 QUALITY ASSURANCE

A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.

B. ASME Compliance:

1. ASME B16.10 for ferrous valve dimensions.

2. ASME B31.9 for building services piping valves.

C. NSF Compliance: NSF/ANSI 61 and/or NSF/ANSI 372 for valve materials for potable-water service. Valves for domestic water must be 3rd Party Certified.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.

2. Protect threads, flange faces, grooves, and weld ends.

3. Set angle, and globe valves closed to prevent rattling.

4. Set ball and plug valves open to minimize exposure of functional surfaces.

5. Set butterfly valves closed or slightly open.

6. Block check valves in either closed or open position.

B. Use the following precautions during storage:

1. Maintain valve end protection.

2. Store valves indoors and maintain at higher than ambient dew point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.1 GENERAL USE VALVES

A. The domestic water supply system shall be fitted with valves at points specified or indicated on the Drawings. Provide minimum 3/4" hose end drain ball valves with vacuum breakers and threaded caps at all low points of the water system to provide for drainage.

B. Lead Free silicon bronze (ASTM listed) valves shall be made with corrosion-resistant materials. Manufacturer shall provide third party certification tested in accordance with EN ISO 6509 regarding dezincification corrosion resistance and stress corrosion cracking.

C. Valves 2" and smaller shall be Bronze Valves, ball type, with threaded or solder ends, unless otherwise indicated. Valves 2-1/2" and larger shall be Ferrous Valves, butterfly type, with flanged ends, unless otherwise indicated.

D. All valves for general use shall be Nibco Inc., Jomar, Apollo, Viega, Zurn, Wilkins, Watts, or Victaulic for grooved systems. All valves shall be designated for a minimum 125 pounds per square inch (S.W.P.), 200 pounds per square inch (W.O.G.).

E. Bronze or brass valves, including check valves and balancing valves, shall be made to be "dezincification resistant", with metal components in the waterway, or not containing more than 15% zinc in their chemical makeup.

F. The name or trademark of the manufacturer and the guaranteed working pressure shall be cast or stamped on the body, as well as 'Lead Free' marked handle.

G. Valves in Insulated Piping: With 2-inch stem extensions:

1. Ball Valves: With extended operating handle of non-thermal-conductive material that meets UL 2043 approved for inside air plenum, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation and memory stops that are fully adjustable after insulation is applied.

a. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO NIB-SEAL (-NS suffix in figure no.), handle extension or approved equal.

2. Butterfly Valves: Shall have 2" extended neck for insulation clearance.

H. Valve-End Connections:

1. Flanged: With flanges according to ASME B16.1 for iron valves.

2. Grooved: With grooves according to AWWA C606.

3. Solder Joint: With sockets according to ASME B16.18.

4. Threaded: With threads according to ASME B1.20.1.

5. Copper Press: With sockets according to ASME B16.22/ASTM B75

I. Bronze Ball Valves

1. Two-piece, full port, silicon bronze ball valves with the capability of accepting extended operating handles. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model T/S/PC-585-80-LF (-NS).

a. Standard: MSS SP-110 and ASME A1124.14

b. CWP Rating: 600 psig

c. Body Design: Two piece bronze with threaded body packnut design (no threaded stem designs allowed) with adjustable stem packing.

d. Body Material: Silicon bronze (ASTM Listed), corrosion resistant.

e. Ends: Threaded, soldered or pressed.

f. Seats: Reinforced PTFE or TFE.

g. Ball & Stem: Silicon Bronze 'Lead Free' Material

h. Port: Full.

J. Ductile Iron, Single-Flange Butterfly Valves

1. 200 CWP, Iron, Single-Flange Butterfly Valves with EPDM Seat and Aluminum-Bronze Disc: Basis-of-Design Product: Subject to compliance with requirements (NSF/ ANSI 61 and/or NSF/ANSI 372), provide NIBCO Model LD-2000N-3/5.

a. Standard: MSS SP-67, Type I.

b. NPS 12 and Smaller CWP Rating: 200 psig

c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.

d. Body Material: ASTM A 536, ductile iron.

e. Seat: EPDM.

f. Stem: One-piece stainless steel.

g. Disc: Lead Free Aluminum bronze.

K. Ductile Iron, Grooved-End Butterfly Valve

1. 300 CWP, Iron, Grooved-End Butterfly Valves with Grade EHP EPDM Seat built into the body of valve. Disc shall be offset from centerline. Basis-of-Design Product: Subject to compliance with requirements (NSF/ANSI 61 and/or NSF/ANSI 372), provide Victaulic 300 Masterseal/Victaulic Series 461 SS valve/ Victaulic 608N.

    a. Standard: MSS SP-67, Type I.

    b. NPS 12 and Smaller CWP Rating: 300 psig

    c. Body Material: Polyamide Coated, ductile iron ASTM A 395.

    d. Stem: Two-piece stainless steel. (Stem shall be offset from the disc centerline to provide complete 360-degree circumferential seating.)

    e. Disc: Coated, ductile iron.

    f. Seal: EPDM; pressure responsive in sizes through NPS 12.

L. Automatic Air Vents:

1. Automatic air vents on lines at locations shown shall be the Armstrong No. 1-AV with petcock, Spirax Sarco No. 13WS, Apco No. 50, or approved equivalent. Air vents shall have 150 PSI cast bodies and stainless steel trim.

M. Drain Valves:

1. Each down fed unit or other equipment shall be provided with drain valves.

2. Drain valves shall be ½" with hose end and cap similar to NIBCO No. T-585-70-66-HC or S-585-70-66-HC, or approved equivalent.

N. Vacuum Relief Valve:

1. A Vacuum Relief Valve shall be installed on domestic hot water tanks as indicated on plans. The vacuum relief valve shall be ANSI Z21.22 rated and CSA certified. The vacuum relief valve shall have an all brass body and include a protective cap. Watts Model N36-M1 or approved equal.

2.2 CHECK VALVES AND BACKFLOW PREVENTERS

A. For condensate drain line "light spring" check valves, refer to Section 221413, "Condensate Drain System".

B. Silicon Bronze Lift Check Valves

1. 200 CWP, Lift Check Valves with Nonmetallic TFE Disc. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model T/S-480-Y-LF.

    a. Standard: MSS SP-139

    b. CWP Rating: 200 psig

c. Body Design: Vertical or Horizontal Flow

d. Body Material: Silicon Bronze (ASTM Listed), corrosion resistant.

e. Ends: Threaded or Soldered.
f. Disc: FTE

C. Silicon Bronze Swing Check Valve

1. 300 CWP, Bronze Swing Check Valves with Nonmetallic TFE Disc. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model T/S-413-Y-LF.

a. Standard: MSS SP-139

b. CWP Rating: 300 psig

c. Body Design: Vertical (flow in upward direction) or Horizontal Flow

d. Body Material: Silicon Bronze (ASTM Listed), corrosion resistant.

e. Ends: Threaded or Soldered.

f. Disc: PTFE or TFE

D. Iron Swing Check Valve

1. Class 125, Iron Swing Check Valves with Metal Seats. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model F-918-LF.

a. Standard: MSS SP-71, Type I

b. CWP Rating: 200 psig

c. Body Design: Clear of full waterway

d. Body Material: ASTM A 126, gray iron

e. Ends: Flanged.

f. Trim: Stainless Steel or Silicon bronze (ASTM listed), corrosion resistant.

g. Gasket: Asbestos free.

E. Iron, Center-Guided Check Valve for Pump Discharge

1. Class 125, Iron, Globe, Center-Guided Check Valves with Resilient Seats. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model F-910-B-LF.

a. Standard: MSS SP-125, FCI 74-1 and MIL-V-18436F.

b. CWP Rating: 200 psig

c. Body Material: ASTM A 126 Class B

d. Ends: Flanged or Wafer

e. Trim: Silicon bronze (ASTM listed), corrosion resistant.

f. Seat: Silicon bronze.

F. Iron Twin Disc Check Valve

1. Class 125, Iron Double Door Check Valves with Resilient Seats. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model W-920-W-LF.

a. Standard: NSF/ANSI 372

b. CWP Rating: 200 psig

c. Body Material: ASTM A 126 Class B

d. Ends: Wafer

e. Trim: Silicon bronze (ASTM listed), corrosion resistant.

f. Seat: Silicone bronze

G. Iron Twin Disc Check Valve

1. Class 125, Iron, Grooved Check Valves with Resilient Seat. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Model G-920-W-LF.

a. Standard: NSF/ANSI 372

b. CWP Rating: 250 psig

c. Body Material: Ductile Iron, ASTM 536

d. Ends: Grooved

e. Trim: Silicon bronze (ASTM listed), corrosion resistant.

f. Seat: Buna N

H. Reduced Pressure Zone (RPZ) Backflow Preventer

1. For sizes 1/2" thru 2", Wilkins Model 375XL-FT-SAG, 'Lead Free', with full port quarter turn ball valves, integral male 45 degree flare SAE test fitting, and Lead-Free bronze 'Y' strainer and air gap fitting piped to nearest drain, Watts, or Apollo.

2. For sizes 2-1/2" thru 10", Wilkins Model 375-FS-OSY-AG, 'Lead Free', OS & Y gate valves, with air gap fitting piped to nearest drain, Watts, or Apollo. Internal components shall be stainless steel.

I. Double Check Valve Backflow Preventers

1. For sizes 3/4" thru 2", Wilkins Model 350XL-S-FT, 'Lead Free', with full port quarter turn ball valves, integral male 45 degree flare SAE test fitting, Watts or Apollo. Valve shall include lever handle ball shutoffs, replaceable seats and seat discs, and test cocks. A stainless steel backflow preventer will be acceptable.

2. For sizes 2-1/2" thru 12", Wilkins Model 350-FS-OSY, 'Lead Free', 'Lead Free', OS & Y gate valves, Watts or Apollo. Unit shall have ductile iron body, stainless steel internals, and EPDM seal ring. Wilkins Model 350AST will be acceptable.

3. Dishwasher, Ice Maker, and Pre-Rinse Sink Dual Check Backflow Preventer shall be all bronze body, the Watts Series 007, Wilkins, or Apollo with plastic check modules, silicone discs, Buna-N seals, and stainless steel springs. Provide strainer ahead.

2.3 DOMESTIC WATER SYSTEM VALVES

A. Slot Adjustment Head Balancing Valves shall be Nibco No. T/S 1710, Sarcoflow, or Taco provided in circulating system where indicated or specified for proportionate flow, with brass body, bonnet, and trim; memory stop feature, test plugs, and position display. Do not use standard ball valves or gate valves for balancing at any location. ***– OR –***

B. Balancing Valve Assembly: Balancing valve assembly shall be Circuit Solver. Valve shall be Circuit Solver as manufactured by ThermOmegaTech. Furnish and install as indicated on the plans, Circuit Solver in the domestic hot water piping. Circuit Solver shall be self-contained and fully automatic without additional piping or control mechanisms.

1. Circuit Solver shall regulate the flow of recirculated domestic hot water based on water temperature entering Circuit Solver regardless of system operating pressure.

   a. When fully closed, Circuit Solver shall bypass a minimum flow to maintain dynamic control of the recirculating loop and provide a means for system sanitizing.

   b. Circuit Solver shall be factory adjustable from 105F to 140F as required by project conditions. (other setpoints available, consult factory)

   c. Circuit Solver shall modulate between open and closed position within a 10F range.

2. Circuit Solver body and all internal components shall be constructed of stainless steel with major components constructed of type 303 stainless steel.

   a. Circuit Solver sizes ½ inch through 2 inch shall be rated to 200 PSIG maximum working pressure. All Circuit Solvers shall be standard tapered female pipe thread, NPT.

   b. All Circuit Solvers shall be rated to 300F (121C) maximum working temperature.

   c. Circuit Solver shall be ANSI/AWWA C800 compliant.

   d. All Circuit Solvers shall be NSF-61 certified with zero lead content for use in all domestic water systems.

e. Thermal actuator shall be spring operated and self-cleaning, delivering closing thrust sufficient to keep orifice opening free of scale deposits.

f. Thermal actuator shall be rated for a minimum of 200,000 cycles.

C. Hydrants

1. HB-1 – Hot or Cold Water Hose Bibbs: Chicago Faucet No. 952-1/2 CP-AB, 'Lead Free', polished chrome, with integral vacuum breaker spout, Zurn Z-875L7, or T & S. Rough chrome or plain bronze finish shall be acceptable for equipment rooms. Mount hose bibbs with centerline 36" to 42" above finished floor.

2. Furnish six (6) spare operating keys for all hydrants to the Owner.

D. Vacuum Breakers: For exposed vacuum breakers, 1/2" size, vacuum breaker shall be T&S Brass B-0929-A, wall-mounted elevated atmospheric vacuum breaker with polished chrome plated brass body. For vacuum breakers, 3/4" to 1" size, vacuum breaker shall be Watts Series LF800M4FR, lead free, pressure anti-siphon vacuum breaker, with built-in relief valve.

E. Vacuum Relief Valve: Vacuum relief valves shall be installed on domestic hot water tanks as indicated on plans. The vacuum relief valve shall be ANSI Z21.22 rated and CSA certified. The vacuum relief valve shall have an all brass body and include a protective cap. Watts Model N36-M1 or approved equal.

F. Unions shall be wrot copper, ground joints, and solder ends, Nibco, or approved equivalent.

2.4 PRESSURE REDUCING VALVES

A. Pressure reducing valves of 2.5" and larger shall be the Victaulic/Bermad Series 972 Valve, lead free with NSF 61/372 approval, flanged or grooved per manufacturer's recommendations. All valve stations shall have low flow bypass with either internal auxiliary Series 935-H direct acting valve, or separate leg with Victaulic Series 972 Valve.

B. Pressure reducing valves of size 2" and smaller shall be Victaulic/Bermad Series 935-H direct acting valve, bronze construction, NSF 61/372 approval, with internal low flow bypass feature.

C. Victaulic Series 386 Pressure Reducing Stations may be used. All components shall be classified in accordance with NSF 61/372. Station should be composed of Victaulic/Bermad Style 972 PRV valves, Victaulic Installation Ready Couplings, Wye strainers and Series 461 Stainless Steel Butterfly Valves. Sizing shall be confirmed with Victaulic Engineering Services.

D. Comparable pressure reducing valves will be determined by engineer.

E. Provide a pressure gauge on inlet and outlet of each pressure reducing valve.

2.5 POINT-OF-USE MIXING VALVES

A. TMV-1 - Individual thermostatic point-of-use mixing valves shall be provided at each sink, lavatory, bank of fixtures, or other appliance requiring hot water. Mixing valves shall be Leonard Model 270-LF-BRKT-CP. Valve shall be of brass and bronze body construction, 'Lead Free', minimum flow rate, .5 GPM; brass and stainless steel flow control components, vandal-resistant

temperature handle adjustment, integral checks/strainers, rough bronze finish, and wall mounting bracket. Mixing valve shall conform to ASSE 1070. Zurn, Lawler, Acorn, or Symmons, shall also be acceptable, shall also be acceptable. Each valve installed must meet fixtures/equipment's maximum flow rate. Valve shall be required to be chrome-plated ONLY when exposed to view. Coordinate with fixture/equipment supplier prior to submittal.

1. For Kitchen Areas, set outlet temperatures of mixing valves in accordance with the requirements of the Owner's Kitchen Staff Director, or the Kitchen Consultants.

2. For other locations, set outlet temperatures of mixers as shown or as otherwise directed by the Owner.

3. Furnish and install shutoff valves on inlet and outlet piping of each mixing valve. Refer to the mixing valve schedule and piping schematic shown on the drawings.

2.6 STOPS

A. Each plumbing fixture furnished under this Contract and each piece of special equipment furnished under other contracts or by the Owner shall, unless otherwise shown or specified, be provided with compression stop valves on the water supply piping. On copper or PEX piping, ball valves shall be installed on branch water piping to equipment. Stops shall be finished brass, chrome-plated where exposed and shall be provided with stop control as shown or specified.

2.7 RELIEF VALVES

A. Relief valves shall be ASME, pressure relief type or combination temperature/pressure relief type, as manufactured by Watts, Kunkle, or Apollo**.** Extend each relief valve outlet to nearest funnel/floor drain or safe waste.

PART 3 – EXECUTION

3.1 INSTALLATION

A. All valves must be accessible.

B. Provide a shutoff valve at the base of upfed water risers and at the top of downfed water risers with a minimum 3/4" hose end ball drain valve with vacuum breaker and threaded cap at the base of all water risers.

C. Each piece of equipment that may have to be removed from the system for repair shall be connected by union or flange and provided with isolation valves.

D. Provide a shutoff valve on water supply to each exterior wall hydrant, regardless of whether shown or not.

E. Upon installation, all testable backflow preventers shall be tested under the Plumbing Contract, in accordance with manufacturer's installation standards, or in accordance with local authorities or utility company having jurisdiction over the installations. All testing shall be completed by persons certified in this type of work. All costs, fees, or charges required for testing shall be included in the Contract price.

END OF SECTION 220523

SECTION 220529 – PLUMBING HANGERS AND SUPPORTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The hangers and supports for the various plumbing systems shall be as hereinafter described in this section.

B. Hangers and supports shall be arranged to distribute the weight of the piping and equipment uniformly on the building structure.

PART 2 - PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

A. All pipe hangers, riser clamps, and supports shall be as manufactured by The Modern Pipe Supports Corp., Anvil International, Inc., Tolco Co., or Erico Corp. The following catalog numbers are taken from The Modern Pipe Supports Corp. Catalog to indicate the type of installation required.

B. Hangers for steel, iron, or plastic piping shall be The Modern Corp. Government ring type hanger, No. 404, complete with band hanger, Fig. No. 540 malleable iron adjuster and rod, or approved equivalent. Hanger bands shall be flat and suitable for application of insulation over the hanger and pipe.

C. Hangers for all copper piping shall be The Modern Corp. No. 48, complete with copper-plated band; No. 121 copper-plated, malleable iron adjuster, and rod, for pipe sizes 1/2” thru 6”, or approved equivalent. PVC coated or epoxy coated hangers will be acceptable. Use The Modern Corp. No. 10, with special PVC coated or padded band, and Fig. No. 540 copper plated, malleable iron adjuster, and rod, for pipe sizes larger than 6”.

D. Insulation shall be installed over band hangers and all openings shall be sealed.

E. Clevis and loop hangers are acceptable, provided that the hangers match the pipe materials. If clevis or loop hanger systems are utilized, insulation shields must be installed to maintain uniform insulation thickness and maintain insulation material characteristics.

F. Hanger rods installed in conjunction with hangers shall be not less than 3/8" for pipe sizes 1/2" to 2"; 1/2" for pipe sizes 2-1/2" and 3"; 5/8" for pipe sizes 4" and 5"; 3/4" for 6" pipe; and 7/8" for 8" to 12" pipe sizes. Hanger rods shall be larger where recommended by the hanger manufacturer.

G. Piping 2" and smaller supported on steel joists shall be hung from one joist with beam clamps. Piping over 2" and 3" in diameter shall be suspended from 1-1/4" steel pipe or steel angle, laid-in and hook-bolted to the web members of the joists. Piping 4" and 5" shall be supported from three joists. Piping 6" and over shall be supported from not less than four joists.

H. Piping along walls shall be supported on substantial wall hangers securely attached to construction by means of inserts or expansion sleeves and bolts. Wall hangers shall be similar to Modern Corp. Fig. No. 284, or approved equivalent.

I. All expansion shells shall be of the self-drilling types, as manufactured by the Phillips Drill Company, Ramset, Rawlplug, or approved equivalent. Shells shall be hammer installed, special flush or hanger rod types. Shells shall be installed with a drill-hammer. Lead expansion shields or lead wedge type shields will not be permitted.

J. Vertical runs of exposed uninsulated piping shall be supported from walls with sections of Modern Corp. Chan-All channel-strut and strut clamps, or approved equivalent. For all insulated piping, use strut clamps sized to permit a continuous insulation installation.

1. "Klo-Shure" insulation couplings will be acceptable, as represented by Scott Industrial Systems (Tele No. 412-965-3279).

K. All supports directly in contact with copper piping shall be copper-plated, PVC coated, or epoxy coated, or equivalent. Ferrous metals shall not be used in contact with copper piping. Hangers for copper tubing 6" and smaller shall be copper-plated, PVC coated, or epoxy coated as herein specified; PVC coated or padded hangers for larger copper piping.

L. Hangers for pipe and tubing, installed horizontally, shall be spaced, at a maximum, as follows:

PVC AND COPPER PIPE SUPPORT SPACING

Pipe Size	PVC, FT	Copper, FT
Up to 1-1/2"	3	6
2" and Larger	4	8

STEEL PIPE SUPPORT SPACING

Pipe Size	Drainage Service, FT	Air & Gas Service, FT
1"	7	9
1-1/2"	9	12
2" & 2-1/2"	10	13
3"	12	15
4" & 5"	14	17
6"	17	21
8"	19	24
10"	22	28

PEX AND CORRIGATED GAS PIPE SUPPORT SPACING

Pipe Size	PEX	CORRIGATED GAS
Up to 1”	32”	32”

M. All vertical runs of piping shall be supported at each floor and/or at specified intervals, by means of riser clamps. Copper tubing shall be protected against electrolysis, such as copper plating, PVC coating, or epoxy coating, or approved equivalent. Supports shall be placed at minimum ten (10) foot intervals for vertical pipe.

N. Where concentrated loads of valves, fittings, etc., occur, closer spacing may be necessary. Smaller pipe shall be provided with additional supports to prevent piping from sagging. Hangers must be installed not more than 12" from each change in direction of pipes.

O. Where cast iron pipe is suspended, a minimum of one (1) hanger shall be provided for each length of pipe at each fitting.

P. Brass chromium plated pipe shall be supported by suitable cast brass, chromium plated supports. All securing devices shall have all exposed heads, finished chromium plated.

Q. Hangers for PEX water piping shall be as follows:

1. Horizontal runs shall be supported in accordance with manufacturer’s installation instructions. Vertical runs shall be supported at every floor. Protect pipe with steel plates where necessary. Provide for expansion and contraction. Protect tubing during storage.

R. For cast iron drainage piping greater than 4”, anchorage is to be provided at change in direction locations and at locations of pipe size greater than two pipe sizes. Braces, blocks, rodding, and other suitable methods as recommended or required by the cast iron fitting manufacturer. Coordinate specific anchor requirements and specifics with cast iron manufacturer.

S. All pipe runs 3" or larger connected to mechanical equipment in Boiler Room and Chiller Room, shall be mounted with steel spring isolators. The first three pipe hangers in the main lines near the mechanical equipment shall be Mason Industries Type PC3ON, Anvil, Tolco, or Erico. Horizontal runs in all other locations shall be isolated by Mason Industries Type 30N hangers, Anvil, Tolco, or Erico. Floor supported piping shall rest on restrained mounts, Mason Industries Type SLR, Anvil, Tolco, or Erico. The first three hangers or mounts near the mechanical equipment shall have the same static deflection as specified for the mountings under the connected equipment. All other hangers and mounts shall have a minimum static deflection of 3/4".

2.2 PIPE PORTALS

A. For pipe penetrating the roof, Contractor shall use Pipe Portal from Portals Plus, or approved equivalent. The Pipe Portal shall include an 18 gauge galvanized roof curb Model 32000 series, with integral base plate, continuously welded corner seams, factory-installed wood nailer, and 1.5” 3lb rigid fiberglass insulation.

B. Pipe Portal shall be furnished with a laminated, acrylic coated, ABS plastic curb cover with prepunched holes and molded sealing ring on an 8” collared opening.

C. An EPDM compression molded cap model C-212 shall be utilized.

D. All Caps shall include Portals Plus' stainless steel Snaplock Clamps.

E. Attachment and installation of the Pipe Portal shall be done in accordance with Portals Plus' instructions and the roofing membrane manufacturer's recommendations.

PART 3 – EXECUTION

3.1 INSTALLATION

A. All piping shall be supported from the building construction by the use of fixed or adjustable beam clamps, concrete inserts, lag bolts and lag screws from wood construction, brackets, extension rods, adjustable band ring pipe hangers, or other equipment as dictated by the type of building construction.

B. The Contractor shall place all hanger and support inserts in concrete. Special studs "shot" into concrete will not be permitted.

C. Perforated band iron, strap, split ring, wire, chain, or pipe hooks will not be permitted for hangers or supports of pipe.

D. Piping shall not be supported from any other piping systems, ductwork, conduit, etc. Piping shall only be supported by code approved and manufacturer recommended hanger systems connected directly to the building's structure.

E. ALL hanger and support locations shall be coordinated and reviewed with the Architect, Structural, HVAC, Electrical Engineer Construction Representatives during construction. If any hanger locations or connection methods are unacceptable to any of the professional team (for example – penetrations of pre-cast concrete tees, from piping, uneven spacing or height, etc.), the Contractor shall relocate the support, at his own expense, to an approved location.

F. Attachments to, and penetrations of new or existing concrete structural tees for hanger connections **shall be not be permitted** until reviewed and approved by the Architect. The Contractor shall be responsible for the expense of all repairs required as a result of the installation of unauthorized attachments to, or penetrations of new or existing concrete structural tees.

G. Trapeze type hangers may be used for multiple parallel line installations. The Contractor shall submit sketches for the proposed hangers indicating the type of construction, number and size of piping, and maximum spacing to the Architect for approval. Include metal shielding for insulation to rest thereon to avoid crushing. Insulation must be continuous as specified. Electrolysis at pipe/hanger must be prevented.

3.2 UNACCEPTABLE HANGER AND SUPPORT INSTALLATIONS

A. It is unacceptable to support any pipe(s) or duct(s) from other pipe(s) or duct(s).

B. If unistrut is used to support piping, strap hangers are unacceptable since they do not allow for continuous insulation.

C. It is unacceptable for this Contractor to support his work from the hangers of other trades. All trades must install their own hangers.

D. Unacceptable hanger and support installations shall be corrected as directed by the Architect/Engineer at no cost to the Owner.

END OF SECTION 220529

SECTION 220553 – PLUMBING IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

PART 2 – PRODUCTS

2.1 EQUIPMENT IDENTIFICATION, VALVE TAGS

A. Where valves, cleanouts, and similar equipment is located above removable tile ceilings or above access panels, the Contractor shall furnish and install identification labels on the corners of the access panels or removable ceiling tiles. Labels shall be provided with the words "VALVES," "CLEANOUT," and similar wording, so that the equipment may be readily located in the future.

B. Identification labels shall not exceed 3" in length and 1" in height. Black letters shall be 1/8" high on white background. Labels shall be manufactured of engraved Micarta or Bakelite with pressure-sensitive backing and shall be nonabsorbent, nonporous and colorfast. Adhesive backing shall be chemically compounded to hold tight and fast at wide temperature extremes. Labels shall be as manufactured by Seton Name Plate Company, Brady Co., MSI Services. Labels shall be additionally secured with screws or rivets. Flexible plastic punched tapes will not be acceptable. Labels shall be coordinated with those being installed under other contracts. **All piping and equipment, insulated and uninsulated, exposed or concealed, shall be labeled with system, flow direction, temperature, pressure, and/or any other system information under this contract.**

C. All major pieces of plumbing equipment shall include, at a suitable and accessible observation point on the equipment, a manufacturer's stamped brass or aluminum identification plate, with all pertinent capacity data stamped on the plate. Identification plate shall include all specific data, such as model number, serial number, motor data, horsepower, capacities, sizes, amperes, power consumption, speed, flows, temperatures, working pressures, operating pressures, and similar factors as applicable. In addition, pumps shall include total head in feet and impeller sizes.

D. The Contractor shall be responsible for furnishing and attaching an identification plate for the above mentioned major equipment if not provided by the equipment manufacturer.

E. Equipment marking tags shall be engraved phenolic, 1/16” thick, and four edges binded, black with white lettering. The tag shall be securely mounted to the equipment. Tags shall be as organized per the Equipment Schedules, and include “date of installation and project number.”

F. The installations will not be considered acceptable unless identification plates and nameplates are attached.

G. All piping and equipment insulated and uninsulated, installed throughout this Contract, shall be labeled with the name of the service and with an arrow indicating the direction of flow. Temperature of hot water systems shall also be included. Pressure of Natural Gas system and

all compressed air piping shall be included. Labeling in exposed locations in finished areas must be coordinated with the Architect prior to installation.

H. Snap-around pipe markers shall, in general, shall be located near each branch connection, at each valve, at each change in direction, on each side of walls or floors, and at least every 30' on straight runs of pipe**.** On smaller runs of piping, center the designations. Snap-around pipe markers by Seton Nameplate Co. "Set Mark," Brady, MSI Services, may be utilized. Identification and colors shall comply with ANSI A13.1. Snap – around markers shall be suitable for exterior use where utilized.

I. Where pipes are adjacent to each other, markings shall be neatly piped up. All markings shall be located in such a manner as to be easily legible from the floor.

2.2 VALVE DIRECTORY

A. The Contractor shall prepare a type written valve directory (and required copies) showing the number, location, use and normal position of valves installed under the Contract. Tag each valve controlling mains and branches, but not individual shutoff or local control valves on fixtures and equipment.

B. Each valve listed in the directory shall have a corresponding number 1-1/2" diameter brass or aluminum tag attached to the valve by means of a brass or aluminum "S" hook or chain. Numbers and code letters shall be as large as possible for identifying each service. Numbers and tags shall be coordinated with those being installed under the HVAC Contract. Valve tag numbers shall not be repetitious.

2.3 ELECTRICAL EQUIPMENT LABELS

A. All electrical equipment and items consisting primarily of electrical components shall bear a label of an independent testing laboratory, such as Underwriters' Laboratory (UL).

PART 3 – EXECUTION

3.1 INSTALLATION

A. Valve directory shall be installed at the location designated by the Architect.

END OF SECTION 220553

SECTION 220700 – PLUMBING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The plumbing pipe insulation shall be as described in this section.

1.3 CODE COMPLIANCE

A. All insulation materials and installation procedures shall be in accordance with the minimum requirements of The International Energy Conservation Code.

PART 2 - PRODUCTS

2.1 INSULATION

A. Furnish and install insulation for the following piping systems and equipment. All insulation and insulating materials, except as herein specified, shall be as manufactured by Knauf, Owens-Corning Company, or Manville. Insulation adhesives, sealers, cements, mastics, and other similar items, except as herein specified, shall be manufactured by HB Fuller, Mon-Eco, Childers, or Vimasco. Same type insulation materials shall be used consistently throughout the entire installation. Thicknesses shall be as indicated below:

TYPE OF SYSTEM	INSULATION THICKNESS
Domestic Cold Water Piping, 2” and below	1/2”
Domestic Cold Water Piping, 2 1/2” and above	1”
Domestic Hot Water and Hot Water Return Piping, 1 1/4” and below	1”
Domestic Hot Water and Hot Water Return Piping, 1 1/2” and above	1 1/2”
Storm Water Piping, Horizontal and Vertical	1”
Sanitary Piping for Heat Trace	1”
Ice Maker and Water Cooler Drainage Piping	1/2”

B. Materials: All materials shall conform to the following:

1. Piping insulation shall be "heavy density," 1-piece molded fiberglass with factory applied type ASN/SSL "All Service" jacket with self-sealing lap. Average thermal conductivity shall not exceed .25 BTU-in. per square foot per degrees Fahrenheit per hour at a mean temperature of 75 degrees. Thickness shall conform to schedule for pipe size and service as specified herein.

2. Vapor-barrier jacket for the fiberglass system shall be white kraft paper bonded to aluminum foil and reinforced with glass fiber, and pressure sensitive, self-sealing lap adhesive conforming to the physical properties listed in next paragraph.

3. The fiberglass insulating system, including insulation, jacket adhesives, mastics and cements, shall have composite fire and smoke hazard ratings as tested under procedure ASTM E-84, NFPA 255, and UL 723, not exceeding: Flame Spread – 25, Fuel Contributed – 50, Smoke Developed – 50.

4. Fittings for the fiberglass system shall also be 25/50/50 rated as described in the preceding paragraph.

5. All products or their shipping cartons shall have label affixed indicating smoke and flame ratings.

C. Installation: Piping Systems

1. Insulation shall be applied on clean, dry surfaces after pressure testing and approval. All insulation shall be continuous, including through wall and ceiling openings and sleeves. Insulation on piping systems shall be maintained with a continuous unbroken vapor seal. Hangers, supports, anchors, guides and equipment shall be insulated and vapor sealed to prevent condensation.

2. All covered pipe shall be located a sufficient distance from walls, other pipes, ductwork, and other obstacles to permit the application of the full thickness of insulation specified; and if necessary, extra fittings and pipes shall be used.

3. All fiberglass insulation shall be installed with Bostitch outward clinched staples, one (1) every 3” and four (4) at each butt strap.

D. Fittings: Fiberglass systems operating below 60 degrees F: Fittings, valves, unions, and flanges shall be insulated with a fiberglass blanket, 1 pound per cubic foot density wrapped firmly under compression (minimum 2:1) to a thickness equal to the adjoining insulation, secured with No. 20 gauge galvanized annealed steel wire and given a smoothing coat of "asbestos-free" insulating and finishing cement and a vapor barrier sealer. Roof drain bodies and overflow roof drain bodies shall be insulated with fiberglass same as above.

E. Fiberglass systems Operating Above 60 Degrees F: Fittings, valves, unions, and flanges shall be insulated and finished with "asbestos-free" insulating and finishing cement to a thickness equal to the adjoining pipe insulation.

F. Services: All adhesives used for gluing insulations and insulating jackets shall be vermin and mildew-proof. The use of flour paste is prohibited.

G. Insulated fitting covers, as manufactured by Zeston, Proto, or Speedline will be acceptable for the fiberglass system.

2.2 PLENUM-RATED INSULATION

A. For non-plenum rated material, 3M Fire Barrier Plenum Wrap 5A+, shall be used. Plenum Wrap shall be a non-asbestos, high-temperature fiber blanket thermal insulation encapsulated in a fiberglass-reinforced aluminized foil. Wrap to meet ASTM E84, NFPA 262 (UL 910), UL 1887,

and ASTM E 136. Plenum Wrap density shall be nominal 6 pcf and have a nominal 1/2" thickness. The fiber blanket shall have a continuous use limit in excess of 1832 degrees F. Flame Spread Index and Smoke Developed Index of foil encapsulated blank shall be <25 / <50.

PART 3 - EXECUTION

3.1 INSTALLATION

A. This Contractor shall furnish and install non-conducting covering on the following piping and apparatus installed under this Contract. For performing and completing this work, this Contractor shall employ an Insulation Subcontractor specializing and experienced in commercial covering work, responsible to the Plumbing Contractor.

B. The following work shall be insulated under the Plumbing Contract:

1. Complete domestic water distribution systems, exposed and concealed. Insulate water piping installed within and around cabinetry and casework. Insulate water meters, backflow preventers, pressure reducing valves, and strainers.

2. All types of roof drain bodies, and all interior storm piping aboveground, exposed and concealed, vertical and horizontal.

3. Branch drain piping from water coolers and ice machines, exposed and concealed.

4. Hot water expansion tanks. Cover expansion tanks, including that furnished by the heater manufacturer, with 1" semi-rigid fiberglass board tank insulation in roll form, faced with a factory applied ASJ vapor retarder, 25/50 rated, conforming to ASTM C-795. Knauf "KwikFlex" insulation acceptable.

5. Insulate inlets and outlets of trap primers, and outlets of trap primer distribution units. Insulate bottoms of distribution units.

6. All capped water piping with valves arranged for future extension shall be insulated.

7. All sanitary piping, horizontal & vertical (including traps), where indicated on the drawings to protect piping from freezing.

8. Condensate drain piping, this Contract, exposed, concealed, including check valves.

a. Where condensate drain piping terminate over floor drains above floor level under the HVAC Contract or the Plumbing Contract, insulate the vertical and horizontal branch sanitary drain line from floor drain to a horizontal point approximately 10' from the floor drain. Insulate entire vertical and horizontal branch run from floor drain if less than 10'.

C. Cover all exposed insulated piping in Finished areas with a .030" thick white PVC jacket, including below counters and fixtures, 25/50 flame/smoke rating, with "heavy duty" fittings, as manufactured by Zeston, Proto, or Speedline,

D. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, sensors, switches, and transmitters on insulated pipes, vessels, and

equipment. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

E. All exposed hot, cold, and drain piping below fixtures for ADA usage shall be insulated, Zurn, McGuire, or Truebro, vandal-resistant as possible. Include insulation of P-Trap. Refer to Section 224000.

F. Application of insulation materials to piping and fittings shall be done in strict accordance with the manufacturers' recommendations. Where thickness of insulation is not specified, use applicable thicknesses recommended by the manufacturer for the specific use. Piping and equipment exterior shall be clean and dry and approved tests shall be completed before any insulation is applied.

3.2 PLENUM-RATED INSULATION

A. Where non-plenum rated material is installed on the sanitary, storm, vent, and/or domestic water piping systems, Plenum Wrap must be installed. Where non-plenum rated material is to be insulated, the Plenum Wrap is to be installed on the pipe insulation. All Plenum Wrap installations must be continuous to maintain plenum and fire separation requirements. Refer to HVAC drawings and specifications for areas of plenum areas.

END OF SECTION 220700

SECTION 221116 – DOMESTIC WATER PIPING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The domestic cold water, hot water, and hot water return piping shall be as hereinafter described in this section.

B. The exterior underground water distribution system shall be as specified in Section 221300.

C. Refer to Section 220523 for interior water valves.

PART 2 – PRODUCTS

2.1 UNDERGROUND DOMESTIC WATER SERVICE PIPING

A. Underground water distribution piping 3" and larger, below grade up to the water meter station shall be cement lined Class 52 ductile iron pipe and cement lined ductile iron Class 52 fittings, minimum. ANSI/AWWA C151/A21.51 and C110/A21.10. Class of pipe and fittings shall conform to the local Water Authority, except where these specifications exceed their requirements. Cement lined Class 52 ductile iron compact fittings will be acceptable if permitted by the Water Authority, ANSI/AWWA C153/A21.53.

B. Underground water distribution piping 2-1/2" and smaller, including interior domestic water piping below floor level in direct contact with the earth, shall be hard drawn copper tubing, Type "K", in accordance with ASTM B-88. Soft temper, Type "K", copper tubing acceptable.

C. The use of any of the above listed materials for underground work shall be subject to the acceptability of that material with the prevailing local codes and utility company regulations. All water line installations shall conform to the requirements of the local Water Authority serving the building. Coordinate with Civil Drawings and Contractor prior to submittal.

1. For water mains that enter the building below structural components, piping shall be sleeved and encased in concrete a minimum of 2'-0" beyond of the structural component, on either side. Coordinate specific requirements with structural design prior to installation.

2. For water mains that enter the building through structural components, piping shall be sleeved through the component. Installation, location, and depth of sleeves need to be strictly coordinated with General Contractor prior to installation.

2.2 DOMESTIC WATER DISTRUBUTION PIPING INSIDE BUILDING

A. Interior domestic water piping above floor level shall be hard drawn copper tubing, Type "L", in accordance with ASTM B-88, with solder joint type wrot copper fittings. Copper tubing manufactured by Cambridge-Lee, Cerro, Mueller, Summit, or approved equivalent. Fittings by Nibco, Cambridge-Lee, Mueller, or approved equivalent. Water intended for human

consumption must have pipes, fittings, and faucets that meet California AB1953 weighted average lead content of the wetted surface area not more than 0.25% lead.

B. Trap primer distribution piping to match the branch pipe material herein specified.

C. All exposed piping and fittings at fixtures shall be polished chrome plated.

D. The use of any of the above listed materials shall be subject to the acceptability of that material with the prevailing local codes and utility company regulations. All water line installations shall conform with the requirements of the local Water Authority serving the building.

2.3 JOINTS AND CONNECTIONS

A. Joints in underground ductile iron water pipe shall be cement lined mechanical joint. Fittings shall be cement lined. Gasketed "push-on" type joints may be employed if acceptable to the Water Authority. Joints for piping installed aboveground or inside building shall be flanged, meeting AWWA C115.

1. Coordinate exterior piping terminal ends with the General Contractor.

B. Fittings shall have the minimum chemical and physical properties as described in AWWA C-900 for the class specified. Standard laying lengths shall be 20' for all sizes. A maximum of 15% of the pipe may be furnished in random lengths of not less than 10' long.

1. Fittings shall be of either ductile iron or cast iron construction. PVC water pipe shall have the same outside diameter as being assembled directly into a cast iron or ductile iron bell or fitting.

2. The rubber ring suitable for cast iron or ductile iron fitting or bell shall be used in jointure, NOT the PVC rubber ring.

3. Fittings shall be lined and coated as specified.

4. Coordinate exterior piping terminal ends with the General Contractor.

C. Joints in underground copper piping shall be with silver soldered fittings or flared (compression) fittings, coated. Viega ProPress System of mechanical joint copper tubing assembly will be acceptable, Nibco Press System, or approved equivalent.

D. Joints in above-floor copper piping shall be assembled with lead-free solder using a non-corrosive flux. All copper tubing and fittings 2" and smaller shall be tinned prior to making solder joint. All solder joints on tubing 2-1/2" and larger shall be made with the use of a circular flame torch. To be considered “lead free”, solder and flux must not contain more than 0.2% lead, and must have solder and flux that meets California AB1953 standard (solder <0.2% lead & flux <0.25% lead for wetted surfaces). All solder joints comply with ASTM B828 2002 and use ASTM B813 2010 for flux.

1. For copper piping 2" and larger, a Type "L" copper grooved mechanical coupling system will be acceptable, Victaulic or approved equivalent. Coupling shall be rated to 250 deg F with off-setting, angle pattern bolt pads. Coupling shall be visually verifiable to ensure proper install. If coupling is not visually verifiable, a torque log shall be provided to

engineer and owner to verify it was installed to written manufacturer's instructions. Basis of Design: Victaulic Style 607H. Use valves as specified only.

2. For copper piping 4" and smaller above floor level, the Viega ProPress System of mechanical joint copper tubing assembly will be acceptable, Nibco Press System, or approved equivalent. The ProPress System shall consist of an electro-hydraulic pressure crimping tool, with sets of interchangeable crimping jaws, and ProPress special copper fittings. The fittings shall include an O-sealing ring, and shall require no torches, solders, flux, or special pipe burnishing or preparation. A permanent, watertight seal is made by crimping the fittings. Rated at 200 psi; tested to 600 psi. The systems shall be installed in accordance with manufacturer's installation instructions and governing code requirements. Pipe supports shall be installed so that interior horizontal piping is in uniform alignment.

3. All screw joint copper pipe shall be made with flake graphite and oil or other approved pipe compound applied to the male threads only and screwed tight with not more than 2 threads on the finished joint exposed, and where pipe and fittings are chrome plated, all threads shall be concealed.

E. Joints in PEX Piping system shall be F1960 cold expansion fittings with reinforcing rings, and tools required to complete the installations. The use or brass and/or plastic joint crimp fittings, as provided by the tubing manufacturer, shall also be acceptable.

F. Suitable adapters shall be used when necessary for connection to fittings, valves, or other accessories having threaded ends.

2.4 WATER METERING EQUIPMENT

A. Water meter will be furnished by the Water Authority for installation by the Plumbing Contractor. Exact rough-in dimensions shall be obtained from the Water Authority before rough-in, including mounting. All costs shall be included in the Plumbing Contract as required; obtain exact costs from Water Authority. Coordinate all remote meter reading installations with the Water Authority, perform all related work, including associated wiring.

B. Metering equipment shall be installed in a space suitable for inspection, protection, and service, and as directly coordinated with the Water Authority.

C. Refer to the water service entrance piping schematic showing the equipment installation. Exact installation sequence of water meter, pressure reducing valve, backflow preventer, and other equipment in line shall be obtained from the Water Authority and coordinated prior to beginning any installation work.

2.5 ELECTROLYSIS CONTROL

A. The installation of copper piping shall be accomplished in such a way as not to touch or come in contact in any way with ferrous metal. Where copper tubing, piping, or fittings are anchored, supported or may come in contact with metal construction, an insulating non-conductor spacer similar to lead, rubber, fiber or plastic shall be installed to assure prevention of electrolysis.

B. Hangers supporting copper tubing shall be all copper, copper-plated or be large enough to accommodate the insulating pipe covering. Copper tubing piping shall not be (even temporarily) supported or secured to ferrous metal.

C. Connections between ferrous and copper piping shall be with dielectric fittings, Watts, Wilkins, Clearflow, or approved equivalent.

2.6 WATER HAMMER ARRESTORS

A. Furnish and install at high points on domestic water risers, two (2) stories and above, automatic washers, dishwashing equipment, at kitchen booster heater, quick-closing valves, and where otherwise required, Zurn Z1700, Josam, Smith, Wade, or Watts, factory-made water hammer arrestors, or approved equivalent, of stainless steel or minimum Type “K” or Type “L” copper. Vertical or horizontal pipe air chambers constructed by the Contractor will not be permitted.

B. Arrestors shall be certified, constructed, and tested in accordance with the recommendations of the Plumbing and Drainage Institute Standard PDI-WH-201 and shall bear their seal of approval.

C. Provide shocks associated with solenoid or other quick-closing valves serving heavy equipment, such as laundry machines. Shock shall be controlled by the installation of Zurn Z1712 Accumutrol water hammer arrestors, Josam, Smith, Wade, or Watts. Shocks shall be complete with floating stainless steel spherical piston, bronze surge chamber, valve, and gauge assembly.

D. Use PVC or stainless steel water hammer arrestors for distilled or deionized water systems.

2.7 AUTOMATIC AIR VENTS

A. Automatic air vents (air eliminators) for hot water systems shall be brass, rated 150 psig, the Spirax-Sarco 13WS, Dole, or Hoffman, installed where shown or required. Provide valve on inlet piping to each air vent.

2.8 STRAINERS

A. Backflow preventers, shall include strainers ahead, integral or separate.

B. All other strainers shall be cast bronze, “Y” type, tapped for closure plug; plug by Contractor; 20 mesh, Type 304 stainless steel screen, (3” – 3/64” perforated screen; 4” – 1/8” perforated screen), 200 psi WOG, minimum, the Watts No. 777S or No. S777S, Apollo, Watson McDaniel, or Spirax

2.9 GAUGES / THERMOMETERS

A. Thermometers shall be non-mercury type, the Weiss Instruments DVU 35 Digital Read-Out, or approved equivalent, Trerice or Ashcroft, mounted on V-shaped aluminum 9” scale with bold black piping and numerals on white background. Range -50 degrees F. to 300 degrees F. Connection assembly shall include swivel nut. Scale size, 2 degrees. Accurate to ± one scale division. Brass 3½” stem. Each thermometer shall be installed in a stainless steel or brass separable socket.

1. Thermometer Test Wells (thermowells) shall be Weksler Model 2SL, Trerice, or Ashcroft.

B. Pressure gauges for domestic water systems shall be Weiss Instruments DUGY3 Digital Read-Out, or approved equivalent, Trerice, or Ashcroft, 4-1/2” dial, 0 – 1000 psi scale, stainless steel

case, and bronze bourdon tube. Gauges of 6" dial type shall be the Weksler BA16, or approved equivalent, aluminum, Style "A", same scale, bottom outlet. Each gauge shall be installed with a Weksler Type A10, brass, 1/4" N.P.T., "T" handle gauge cock and Weksler No. WG42 brass, 1/4" N.P.T. snubber-filter, or equivalent.

1. Pressure gauges for secondary gas regulating equipment shall be of type as specified with that equipment; refer to Section 221124.

2.10 FILTERS

A. Plumbing Contractor shall furnish and install water pipe filters where indicated on the drawings. Filters may be wall mounted. Water filters shall be taste-odor-sediment filter, Everpure, CUNO, Ametek. Provide six (6) spare filter cartridges for each filter to the Owner. Filters must be placed in accessible locations for cartridge replacement.

B. Certain filters for Kitchen work will be furnished by the Food Service Equipment Contractor to the Plumbing Contractor for installation.

PART 3 – EXECUTION

3.1 WATER DISTRIBUTION

A. All piping shall be installed in spaces and adjacent to other surfaces with sufficient clearances to permit air relief of the hot water system. Air venting valves shall be installed at all trapped high points in the hot water piping. Air venting valves shall be as specified.

B. The water systems included under this Contract, interior and exterior, shall be thoroughly flushed upon completion of the installations. Clean out all strainers.

3.2 INSTALLATION OF PIPING AND VALVES

A. Wrapping threads or caulking screwed connections for tightness is prohibited. No horizontal piping shall be built-in or buried in partitions. No piping shall be erected over any motors, panelboards, switchboards, or other electrical equipment. Bending of piping will not be permitted; fittings for change of direction shall be utilized. All vertical piping shall be run plumb. All overhead horizontal piping and vertical piping in finished areas shall be concealed, except as otherwise indicated on the drawings.

B. Cut pipe accurately to measurements, and ream free of burrs and cutting splatter. Carefully align and grade pipe and work accurately into place. Fittings shall be used for any change in direction. Make adequate provisions for expansion and contraction. Install anchors to prevent pipe movement. Provide for expansion at every building expansion joint.

C. All buried pipe for underground service piping shall be installed to prevent any movement or blow-out of fittings due to pressure surges in the line. Provide concrete thrust blocking at all turns in the underground piping systems and restraining rods or other methods of support for piping included under this Contract, especially at building entrances, as directed by the Water Authority. Thrust blocking shall be installed at all tees, plugs and bends deviating from the straight run in excess of 15 degrees. Blocking shall be placed between the fitting to be anchored and solid, undisturbed earth. The entire installations shall conform with Water Authority requirements. Confirm requirements prior to bidding.

D. Protect open pipe ends to prevent trash from being placed in the piping during installation. Clean all dirt and cutting debris from pipes before making the next joint.

E. Small pipe shall be screwed or soldered as required to produce a tight system with full joints and no leaks. Pipe joints showing seepage and drips shall be dismantled and remade in proper way, as required for a substantial installation.

F. Copper pipe shall be carefully reamed back to full inside diameter and the mating surfaces shall be cleaned by brush or sandpaper. When clean, the paste flux shall be applied and the joint evenly heated and soldered. Any fittings discolored by heat shall be removed and replaced.

G. All valves to be soldered into piping shall be dismantled to prevent the heat from destroying packing and seats.

H. Valves installed in threaded or flanged piping shall be properly supported and pipes carefully installed to prevent damage or distortion of the valve.

I. Grooved Joints: Install in accordance with the manufacturer's latest published installation instructions. Pipe ends shall be clean and free from indentations, projections and roll marks in the area from pipe end to (and including) groove. Gasket shall be manufactured by the coupling manufacturer and verified as suitable for the intended service. A factory trained representative (direct employee) of the coupling manufacturer shall provide on-site training for contractor's field personnel in the use of grooving tools, application of groove, and product installation. The representative shall periodically visit the job site and review installation to ensure best practices in grooved joint installation are being followed. Contractor shall remove and replace any improperly installed products.

J. Grooved Joint Lubricants: Lubricate gaskets with lubricant supplied by the coupling manufacturer in accordance with published installation instructions. The lubricant shall be approved for the gasket elastomer and system media. Installation instructions and lubricant selection shall be submitted to engineer for approval

K. Install minimum 3/4" ball valve drains with vacuum breakers and threaded caps at every low place and air vents at every high place. Pipe shall slope as shown on the Drawings or in the Specifications. If slope is not shown or specified, slope in the direction of flow one (1") inch per every forty (40') feet.

L. Install pressure gauges, thermowells, and thermometers as specified or shown in details on the Drawings.

M. All valves must be accessible.

N. Extend each air vent outlet and relief valve outlet full size to nearest funnel/floor drain or safe waste.

3.3 CLEANING AND TREATING OF PIPE SYSTEMS

A. Every pipe system shall be cleaned to remove trash, mill scale, cutting oil, welding, and burning splatter from the piping before any control devices are installed. If such debris has collected in valves, the valves shall be disassembled and cleaned prior to closing for the first time.

B. Brush and clean work prior to concealing, painting, and acceptance. Perform in stages if directed by the Architect.

C. Clean and repair painted exposed work, soiled or damaged, to match adjoining work before final acceptance.

D. After several hours of operation, each strainer shall be blown down. This shall be repeated as often as necessary to produce a clean discharge from the blowdown. Prior to turning the system over to the Owner, each strainer shall be cleaned, removed if necessary for this requirement.

3.4 INSTALLATION AND TESTING PROCEDURES

A. All domestic water distribution piping included under this Contract shall be hydrostatically tested to a pressure of one and one-half times the normal system pressure or 150 psi, whichever is greater, and maintained for a period of 2 hours with a pressure loss of not more than 5 psi. The exterior water distribution system included under this Contract shall be installed and tested in compliance with the local Water Authority. Confirm requirements prior to bidding. *– OR –*

B. All domestic water distribution piping included under this Contract installed after the main PRV station shall be hydrostatically tested to a pressure of 150 psi, and maintained for a period of 2 hours with a pressure loss of not more than 5 psi. The exterior piping system included under this Contract shall be tested under a hydrostatic pressure of not less than 200 lbs. for at least two hours, or at 50 psi in excess of the maximum static pressure when the maximum static pressure is in excess of 150 psi, in accordance with NFPA requirements for water piping serving fire protection systems. The exterior water distribution system included under this Contract shall be installed and tested in compliance with the local Water Authority. Confirm requirements prior to bidding.

C. Maintain 48" minimum ground cover over top of all exterior underground service piping, or as additionally required by the local Water Authority. All excavation and backfilling shall conform to Water Authority requirements.

D. All buried water piping shall be installed to prevent any movement or blow-out of fittings due to pressure surges in the pipe. Provide concrete thrust blocking at all turns in the underground piping system and restraining rods or other methods of support for piping included under this Contract, especially at building entrance, as directed by the Water Authority. Thrust blocking shall be installed at all valves, tees, and bends deviating from the straight run in excess of 15^{o}. Blocking shall be placed between the fitting to be anchored and solid, undisturbed earth. Refer to the thrust blocking details. The entire installation shall conform to Water Authority requirements. Confirm requirements prior to bidding.

3.5 DISINFECTION OF WATER SYSTEM

A. Before being placed in service, all water piping, interior and exterior, included under this Contract, shall be chlorinated to the satisfaction of the Architect.

B. Prior to chlorination, all dirt, foreign matter shall be removed by a thorough flushing.

C. A water mixture of hypochlorite solution shall be applied by means of a solution-feed device.

D. Treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. This period shall be at least 3 hours and preferably longer as may be directed.

E. After the chlorine treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative points shall be at least 5 parts million.

F. Following chlorination, all treated water shall be thoroughly flushed from the newly installed piping at its extremities until the replacement water throughout its length shall, upon test, be equal to the water quality served from the municipal water supply system.

G. Should the initial treatment, in the opinion of the Architect, prove ineffective, the chlorination procedure shall be repeated until confirmed tests show the water sampled from the newly installed piping conforms to the requirements.

3.6 EXPANSION COMPENSATION

A. Pipe installations shall allow for expansion due to temperature differences. Provide expansion offsets in piping where necessary to control expansion.

B. Provide for expansion at every building expansion joint.

C. Separate expansion joints shall be a braided bronze or stainless steel flexible pipe connector, as manufactured by Flex-Hose Co., Inc., Flexonics, or Flexible Metal, Inc., suitable for water service. Expansion joints must be accessible.

3.7 BRANCH PIPING TO FIXTURES AND EQUIPMENT

A. Branch piping shall be extended and connected to all fixtures and equipment requiring same. Sizes of such connections shall be as indicated on the drawings and the Fixture Schedule, or as required by the particular piece of equipment or fixture being served. If the sizes of such connections are not clearly indicated, the Contractor shall verify the sizes required with the Architect prior to commencement of any roughing-in work. Changes to piping necessitated due to the Contractors' failure to properly verify the required sizes shall be made at the Contractors' expense.

3.8 WATER MAKE-UP SYSTEMS

A. Every water system not used for domestic water, such as for HVAC equipment and similar equipment, shall be provided with an RPZ backflow preventer, certified for that service and acceptable to the local plumbing code administrator to prevent back pressure or back siphonage of contaminated water into the domestic water system.

END OF SECTION 221116

SECTION 221124 – NATURAL GAS PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE OF WORK

A. The interior natural gas distribution systems shall be described in this section. All work shall conform to the National Fuel Gas Code, NFPA Standard 54.

B. Refer to Section 220500 for river sand installation around underground pipe included under this Contract.

C. Refer to Section 221300 for exterior natural gas distribution piping.

D. All work under this Contract shall conform to the requirements and regulations of the Gas Company serving the building.

E. Main gas metering and regulating equipment serving the building will be furnished and installed by the Gas Company.

PART 2 - PRODUCTS

2.1 NATURAL GAS PIPING

A. Underground gas piping provided under this Contract shall be Republic Steel X-Tru-Coat, plastic coated Schedule 40 ASTM A-53 steel pipe. ***- OR -*** If the Contractor so desires, and allowed by Gas Company, Underground gas piping provided under this Contract shall be minimum SDR 11 polyethylene pipe, conforming to ASTM D2513, purchased from the Gas Company, or as otherwise required by the Gas Company. Pipe shall be similar to the Driscoplex 6500 Series, PE2406, MDPE “CP Chem” polyethylene piping, Plexco. Polyethylene piping not permitted above ground.

B. Gas piping 2" and larger above ground shall be Schedule 40 ASTM A-106 seamless black steel pipe, Schedule 40 ASTM A-53 black steel pipe acceptable. Gas piping 1 1/2" and smaller above ground shall be Schedule 40 ASTM A-53 black steel pipe.

C. Galvanized pipe and fittings not acceptable.

D. Exterior gas sediment traps shall be required for all exterior gas-fired equipment on ‘dry gas’ systems, and shall be installed per NFPA recommendations.

E. Provide gas drips legs as required per Gas Company requirements on ‘wet gas’ systems. Exterior gas drip legs not permitted per the National Fuel Gas Code; install gas legs at heated interior of building to avoid condensate freeze-up, in accordance with interpretation NFPA recommendations, or as otherwise directed by the Gas Company.

2.2 VALVES

A. Furnish and install all valves necessary to the proper operation of the system. A valve shall be placed where each branch leaves the main and at such points as required for the proper control and shut-off of all piping. Each piece of equipment that may have to be removed from the system for repair shall be connected by union or flange, and provided with isolation valves. Gas valves shall be of manufacturer and style as listed on the Gas Company approved materials list, as manufactured by Homestead, Nibco, Apollo, or Crane.

B. Furnish and install full port gas valves for the gas supply piping to all gas-fired equipment. Furnish and install main full port gas valves, sized to match the incoming gas main into the building. **All gas valves shown on the drawings and indicated in the specifications shall be full port valves. Restricted port gas valves will not be acceptable.**

2.3 GAS REGULATORS

A. Furnish and install interior gas regulators where shown, complete with pressure gauges, unions, and gas shut-off valves on inlet and outlet. Regulator shall be as manufactured by Maxitrol, Chaplin-Fulton, or Fisher, of type conforming to Gas Company requirements. Coordinate with manufacturer regarding specific sizing. Regulator shall conform to ANSI Standard Z21.80. Regulator must provide positive tight shutoff, or positive tight lock-up at zero flow. Provide documentation of BTU and pressure range at **FULL LOAD** on submittal.

1. Pressure gauges shall be 2-1/2" minimum diameter, with waterproof cases, the Weksler No. 25KL, Trerice, or Ashcroft. Pressure gauges shall include brass socket, plastic lens, phosphor bronze diaphragm, required pressure range, 1/4" N.P.T., suitable for reading natural gas.

B. Regulators located inside the building must be vented to the outside. The vent pipe shall be at least the same size as the relief vent outlet, and shall be designed to prevent the entry of water, insects or other foreign material. (The only exception is that a regulator containing a vent limiter that is listed as complying with ANSI Z2.18 may be installed inside, in a well ventilated location, without a vent to the outside).

1. For exterior regulators, pressure gauges shall include waterproof cases.

PART 3 - EXECUTION

3.1 JOINING NATURAL GAS PIPING

A. Exterior underground gas piping shall be steel pipe with welded joints, using X-Tru-Tape and primer at each joint. ***– OR –***

B. Assembly and joining of SDR 11 polyethylene pipe system is performed by heat fusion. Fusion joints are made by heating and melting the pipe and fitting together. This type of joint gives a homogeneous transition between the two components without the lowering of chemical resistance associated with solvent cement joining and without the loss of integrity and loss of pressure handling ability of a threaded joint. Three different fusion methods for Georg Fischer's PE100 are available and commonly used in today's demanding applications. These include socket electrofusion, conventional butt fusion, and Infrared (IR) butt fusion.

1. IR PlusR Infrared Butt Fusion Joining – Ideal method to join IR fusion fittings in the size range of up to 8" to achieve the maximum joint consistency. Regular butt fusion can also

be used to join IR and contact butt fusion fittings in the size range up to 36". Using the process-controlled fusion machinery, high-strength butt fusion joints can be made with many advantages over the conventional, pressure type butt fusion methods. A non-contact IR heating plate is used, along with a predetermined overlap to join the pipe (or fitting) ends together eliminating the potential for operator error. Reliable, reproducible, high strength joints with smaller internal and external beads can be achieved.

2. Contact (Conventional) Butt Fusion Joining – Georg Fischer's Contact Butt Fusion joining is an alternative to IR Butt Fusion for smaller dimension pipe and fittings 8" and below, while also being an industry standard fusion method through 36". Butt fusion pipe and fittings both have the same inside and outside diameters. To make a butt fusion joint, the pipe and fitting are clamped so that the ends to be joined are facing each other. The ends are then "faced" flat and parallel. A flat heating plate is used to simultaneously heat both faces to be joined. When each end is molten, the heating plate is removed and the pipe and fitting are brought together, joining the molten materials by fusion.

3. Electrofusion Joining – excellent solution for final connection of prefab spool assemblies within a system: hard-to-reach field joints, places where a mechanical connection poses a process risk, or for future connections onto an existing system. GF's advanced electrofusion technology uses the resistance of the coil as well as ambient conditions to ensure the highest quality joint every time. The design of our electrofusion fittings eliminates the potential of the fluid media contacting the coil, while insuring no change in pressure rating for your piping system. These features as well as the fully automated welding process makes this one of the safest and easiest fusion technologies on the market.

C. Gas piping, 2" and smaller, shall be installed by threaded pipe and fittings. Welded piping, 2-1/2" and larger, shall be welded with appropriate fittings and procedures. Welding shall be performed by certified welders only. Threaded fittings shall be assembled with 150 lb. malleable iron screwed fittings. All gas pipe fitting installations MUST adhere to NFPA 54 requirements.

1. Where screw fittings are utilized, field threading shall meet the requirements of ANSI B2.1. Screw joints shall be made up tight using a non-hardening pipe joint compound applied to male threads only.

D. Natural Gas Press fittings may be used provided that local Gas Company approves of this procedure. Natural Gas Press fitting system shall be by Viega MegaPress G Natural Fuel Gas System or approved equivalent. Press Fitting systems to meet all ASTM, NFPA, and all other appropriate code requirements. Installation of press fittings to follow manufacturer requirements and shall be installed by trained professionals. Contractor to provide written confirmation from local Gas Company as a part of the submittal process to confirm the use of Natural gas press fittings.

E. When installing piping which is to be concealed, the number of fittings shall be kept to a minimum.

F. Separate expansion joints shall be a braided bronze or stainless steel flexible pipe connector, as manufactured by Flex-Hose Co., Inc., Flexonics, or Flexible Metal, Inc., suitable for gas service, conforming to Gas Company requirements. Expansion joints must be accessible.

3.2 DEFECTIVE NATURAL GAS PIPING

A. When defective pipe or fittings are located in the system, the defective material shall be replaced. Under no circumstances shall defects in pipe or fittings be repaired.

3.3 PURGING NATURAL GAS

A. Prior to establishing service, all gas piping shall be fully purged. Piping shall not be purged into the combustion chamber of an appliance.

B. The open end of piping systems being purged shall not discharge into confined spaces or areas where there are sources of ignition unless precautions are taken to perform this operation in a safe manner, by ventilation of the space, control of purging rate, and elimination of all hazardous conditions. Never leave the appliance while purging.

3.4 TESTING AND INSTALLATION REQUIREMENTS – NATURAL GAS

A. The gas piping included under this Contract shall be given a pressure test with air or an inert gas before being placed in service, in accordance with Gas Company requirements. Under no circumstances may oxygen, flammable gas or any liquid be used as the test medium. To locate leaks, piping joints should be covered with soapsuds or a leak-finder liquid. In no case shall ether, Freon, or any gas that will produce a toxic atmosphere when burned, be injected into the piping to locate leaks.

B. Gas piping, as shown by testing, must be free of leaks before being placed in service. All testing shall be done using an approved gauge.

C. All gas piping included under this Contract shall be installed and tested in strict accordance with requirements of the Gas Company. The Contractor shall contact the Gas Company before bidding for service and shall obtain and pay all fees required for work included under this Contract. All fees required by the Gas Company must be included.

3.5 NATURAL GAS COLOR CODING/LABELING

A. Color code and/or label interior and exterior exposed and accessible concealed gas piping, included under this Contract, per Gas Company and Owner requirements. Contractor shall primer and paint all exterior gas piping “yellow” by default unless directed otherwise by owner or architect.

END OF SECTION 221124

SECTION 221300 – BUILDING SERVICES PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The exterior sanitary sewer system, exterior storm sewer system, exterior acid waste system, exterior domestic water service, exterior fire service, and exterior natural gas service shall be as hereinafter described in this section.

B. All pipe materials, equipment, and installation methods shall be subject to the acceptability of that material with the prevailing local plumbing codes and utility companies having jurisdiction over the various installations.

PART 2 - PRODUCTS

2.1 EXTERIOR SANITARY SEWERS

A. The Contractor shall furnish and install sanitary sewer piping, manholes, grease interceptors, and cleanouts as indicated on the drawings. Minimum size below grade shall be 4" except for vent piping. Pipe sizes shall be larger where required by local codes.

B. Polyvinyl Chloride (PVC) Plastic Pipe-SDR-35; ASTM D2665; ASTM D2949; ASTM D3034. PVC pipe and fittings as manufactured by Charlotte, Geneva, or Spears. Use service weight or extra heavy weight coated cast iron soil pipe where required for extension, in accordance with the requirements of local codes. Cast iron pipe and fittings as manufactured by Charlotte, Tyler, AB & I, or approved equivalent. PVC foam core piping and fittings not permitted.

1. Do not use PVC piping underground where heating system piping may be present.

C. Provide sanitary sewers exiting the building each with vents, house traps, and cleanouts within the limits of sewer construction included under this Contract work, as required by the prevailing plumbing code.

D. Joints and Connections

1. Joints in exterior sanitary PVC sewer piping shall be made with flexible elastomeric seals (ASTM D3212).

2. Joints in cast iron hub and spigot shall be made with either (1) a caulked joint using pig lead and oakum with at least 12 ounces of lead per inch of pipe diameter. Lead shall be run in one pouring; (2) a compression joint using a lubricated neoprene gasket, Tyler "Ty-Seal"; Charlotte Foundry, or AB & I.

3. All transition joints in sewers between dissimilar materials or unequal sizes shall be made water and gas tight by means of an approved connection or adapter of the compression or mechanical seal type. The connector or adapter shall be manufactured of preformed

Elastomeric Polyvinyl Chloride conforming to ASTM Standards C-425, C-594, C-564, and D-1869. Couplings of the mechanical seal type shall have tightening clamps or devices made of 305 stainless steel. The compression joint connector or adapter and flexible coupling shall be installed as recommended and specified by the manufacturer and each connector shall bear the manufacturer's name clearly visible when installed, such as manufactured by Fernco Joint Sealer Company, Indiana Seal, or Mission.

4. All joints shall be made permanently gas and water tight.

5. The use of any of the above joints and connections shall be subject to their acceptability with the prevailing local plumbing codes.

2.2 EXTERIOR SANITARY CLEANOUTS

A. Cleanouts shall be extended to grade with 45 degree fittings.

B. Cleanouts shall be full size up to and including 4", and shall be 4" on larger size piping, if approved by the local authorities having jurisdiction over the installations.

C. All exterior sanitary cleanout equipment shall be Zurn, Josam, Smith, Wade, or Watts. Refer to "Tamperproof Screws", Section 220500. Cleanout shall be Zurn Z1400-HD-VP, adjustable exterior extra heavy-duty round cleanout, vandalproof screws, cast bronze plug, set in concrete slab, 24" x 24" x 6" thick. Provide nickel-bronze finish cleanouts at any finish entrances or exits of building.

D. The Contractor shall lubricate all plugs before installation and shall loosen all covers and plugs before final inspection as directed by the Architect.

2.3 SANITARY MANHOLES

A. Manholes shall be precast concrete and shall conform to ASTM C478 and depths shown on the Drawings. Cones and sections shall be substantially free from fractures, large or deep cracks and surface roughness. Slabs shall be sound and free from gravel pockets. All lift holes on precast elements for sewer manholes shall be completely filled with an approved bitumastic material. All joints between precast elements shall be made with an approved bitumastic material or an approved rubber gasket.

B. Manhole steps shall be furnished and installed in each manhole. The steps shall be made of fiberglass reinforced polyester, ASTM D2444, D635. Cast iron or aluminum steps will also be acceptable, in accordance with local code requirements.

C. Sewer brick shall conform to the Specifications for Grade SS sewer brick ASHTO Designation M-91, "Sewer and Manhole Brick". Brick shall only be used for grade adjustment. Waterproof the brick construction with approved bitumastic material. Precast concrete grade rings will be acceptable.

D. Precast base sections and cast-in-place bases shall be placed on a selected granular bedding course, but not less than six (6) inches in thickness and extending to the limits of the excavation. The bedding course shall be firmly tamped and made smooth and level to assure uniform contact and support of the precast element.

E. Pipe connections shall consist of a rubber type gasket, conforming to ASTM Designation C-923 or C-443, the Press-Seal Gasket Corporation PSX Series, or approved equivalent. The gasket shall be cast into the manhole wall. The surrounding area shall be firmly rammed full of non-shrinking grout. The manhole-sewer joint shall be completely coated with a bituminous material to insure water-tightness.

F. Provide manhole exterior coating, McCann-Shields Black Asphalt Paint, by McCann-Shields Paint Co., Pittsburgh, PA, or approved equivalent.

G. Sanitary Manhole Frames and Covers:

1. The inscription "SANITARY SEWER" shall be cast in 1” minimum letters in the cover. Frames and covers shall be painted with black asphaltic paint.

2. Standard frames and covers shall be similar to East Jordan Iron Works, Inc., 1890 Series, Neenah Foundry, McKinley Iron Works, or approved equivalent, and equipped with two pick holes – 180 degrees apart. At least four (4) hex head stainless steel cap covers with washers. Loading rating: heavy duty; frame and cover not less than 395 lbs. total weight, combined; and machined bearing surfaces. Frames and covers shall conform to local code installation requirements.

2.4 EXTERIOR SANITARY TRAPS

A. PVC, service weight or extra heavy weight cast iron, in accordance with applied piping system.

B. Traps shall be set true with respect to their water seals.

2.5 SANITARY SEWER GRADE

A. Elevations and locations of manholes and cleanouts shall be adjusted to avoid interference with other utilities and equipment without additional expense.

2.6 SANITARY SEWER INSTALLATION AND TESTING PROCEDURES

A. Unless noted otherwise on the Drawings or required to suit final site elevations, all main piping shall be installed with a uniform minimum slope of 1/8" to the foot, or as otherwise required by local codes. Maintain 30” minimum ground cover above exterior piping.

B. The exterior sanitary sewer systems included under this Contract shall be installed and tested in compliance with the local authority having jurisdiction. Confirm requirements prior to bidding.

C. After testing and before final acceptance, the Contractor shall completely flush the entire sewer systems and appurtenances included under this Contract in sufficient volume to remove all settlement and debris to obtain free flow through each pipe. Flushing shall be accomplished by the use of fire hoses, flushing manholes, or other means approved by the Architect. Depths of water and velocities shall be as required to produce a hydraulic bore. Remove all obstructions and correct all defects discovered.

D. Exercise extreme care to prevent debris from entering piping, manholes, and cleanouts. Carefully check invert elevations of piping to which connections are to be made.

E. All exterior manhole and cleanout top elevations shall be arranged and set to match finished grades. It is the responsibility of this contract to have the manhole and cleanout top elevations to match existing and/or new grade elevations.

2.7 FINAL INSPECTION – SANITARY SEWERS

A. At the time of final inspection of the work performed under the Contract, the exterior cleanouts and manholes shall be complete in every respect and in perfect operating condition. All surplus materials of every description resulting from the work shall have been removed. Piping shall be free from debris, sand, silt or other obstructions. Any defects discovered in piping, manholes, and cleanouts subsequent to this inspection shall have been corrected.

2.8 EXTERIOR WATER DISTRIBUTION SERVICE

A. Exterior underground water distribution piping 2-1/2" and smaller installed under this Contract shall be hard drawn copper tubing, Type "K", in accordance with ASTM B-88, with silver soldered fittings or flared (compression) fittings, coated. Soft temper, Type "K", copper tubing acceptable.

B. Exterior underground water distribution piping installed under this Contract shall be cement piped Class 350 ductile iron pipe and cement piped ductile iron Class 350 fittings, minimum. ANSI/AWWA C151/A21.51 and C110/A21.10. Class of pipe and fittings shall conform to the local Water Authority, except where these specifications exceed their requirements. Cement piped Class 350 ductile iron compact fittings will be acceptable if permitted by the Water Authority, ANSI/AWWA C153/A21.53.

1. Polyethylene Encasement: All underground ductile iron pipe, fittings, valves and other appurtenances included under this Contract shall be wrapped with 8-mil thickness polyethylene film, using the following recommended minimum flat tube widths for the specified pipe sizes. The polyethylene film shall be of virgin polyethylene and shall be manufactured in accordance with A.W.W.A. C105/A21.5, ASTM A674:

Nominal Pipe Size	Flat Tube Width
4"	16"
6"	20"
8"	24"

C. Contractor shall furnish, install, lay, joint and test all AWWA C-900 Poly Vinyl Chloride (PVC) pipe, appropriate fittings, specials (4" and larger) and appurtenant materials and equipment, all as shown on the drawings and herein specified. Class of pipe and fittings shall conform to the local Water Authority, except where these specifications exceed their requirements.

D. Exterior underground water distribution piping installed under this Contract shall be PVC with gasketed joints, both 200 psi rating, minimum SDR 21, as manufactured by The Harrington Corporation, National Pipe Company, CertainTeed, or approved equivalent. PVC fittings shall be pressure type, conforming to ASTM D1784, tested in accordance with ASTM D1599. Both pipe and fittings shall be NSF approved. Install piping in accordance with local codes and manufacturer's installation instructions and recommendations. Class of pipe and fittings shall conform to the local Water Authority, except where these specifications exceed their requirements.

E. The polyethylene tube seams and overlaps shall be wrapped and held in place by means of 2-inch-wide plastic backed adhesive tape. The tape shall be Polyken Number 900 (polyethylene), Scotchrap Number 50 (polyvinyl), American Cast Iron Pipe Company, or approved equivalent. The tape shall be such that the adhesive shall bond securely to both metal surfaces and polyethylene film. Torn or damaged polyethylene film shall be removed from the site and properly discarded.

F. The use of any of the above listed materials for exterior underground work shall be subject to the acceptability of that material with the prevailing local codes and utility company regulations. All exterior water pipe installations shall conform with the requirements of the local Water Authority serving the building.

2.9 WATER SERVICE METER VAULT

A. If required by local authority, water service meter vault shall be constructed under the Plumbing Contract in accordance with the drawing details, as required by the Pennsylvania American Water Company. A precast vault will be acceptable. Do not backfill until pit inspection is completed by the Water Authority.

B. Submit details of construction prior to submittal, with prior review and approval of same by the Water Authority.

C. Valves 2” and under shall be IPS. Valves 4” and larger shall be flanged.

D. Water service will not be provided by the Water Authority until vault is completed.

E. Meter assembly will not be furnished and installed by the Water Authority until all piping is completed in the vault. A filler piece shall be furnished and installed by the Plumbing Contractor to assure proper alignment of flanges.

F. Confirm vault location with door equipment supplier to ensure proper load bearing for door design.

G. Furnish and install a Watts 709, or equivalent, backflow preventer in pit as noted, as required by the Water Authority.

H. Provide an FD-2 floor drain in pit with required piping for drainage.

2.10 EXTERIOR DOMESTIC WATER JOINTS AND CONNECTIONS

A. Suitable adapters shall be used when necessary for connection to fittings, valves, or other accessories.

B. Joints in underground ductile iron water pipe shall be cement piped mechanical joint. Fittings shall be cement piped. Gasketed "push-on" type joints may be employed if acceptable to the Water Authority. Joints for piping installed aboveground or inside building shall be flanged, meeting AWWA C115.

C. Fittings shall have the minimum chemical and physical properties as described in AWWA C-900 for the class specified. Standard laying lengths shall be 20' for all sizes. A maximum of 15% of the pipe may be furnished in random lengths of not less than 10' long.

1. Fittings shall be of either ductile iron or cast iron construction. PVC water pipe shall have the same outside diameter as being assembled directly into a cast iron or ductile iron bell or fitting.

2. The rubber ring suitable for cast iron or ductile iron fitting or bell shall be used in jointure, NOT the PVC rubber ring.

3. Fittings shall be lined and coated as specified.

D. Joints in underground PVC water pipe shall be bell type, gasketed joint, conforming to ASTM D3139, with gaskets conforming to ASTM F477. Push joint or mechanical joint ductile iron fittings meeting AWWA C153 will be permitted when PVC sizes are not available. All joints must be acceptable to the local Water Authority.

2.11 EXTERIOR DOMESTIC WATER INSTALLATION AND TESTING PROCEDURES

A. All exterior domestic water distribution piping included under this Contract shall be hydrostatically tested to a pressure of one and one-half times the normal system pressure or 150 psi, whichever is greater, and maintained for a period of 2 hours with a pressure loss of not more than 5 psi. The exterior water distribution system included under this Contract shall be installed and tested in compliance with the local Water Authority. Confirm requirements prior to bidding. ***– OR –***

B. The exterior piping system included under this Contract shall be tested under a hydrostatic pressure of not less than 200 lbs. for at least two hours, or at 50 psi in excess of the maximum static pressure when the maximum static pressure is in excess of 150 psi, in accordance with NFPA requirements for water piping serving fire protection systems. The exterior water distribution system included under this Contract shall be installed and tested in compliance with the local Water Authority. Confirm requirements prior to bidding.

C. Maintain 48" minimum ground cover over top of all exterior underground piping, or as additionally required by the local Water Authority. All excavation and backfilling shall conform to Water Authority requirements.

D. All buried pipe for water piping shall be installed to prevent any movement or blow-out of fittings due to pressure surges in the pipe. Provide concrete thrust blocking at all turns in the underground piping system and restraining rods or other methods of support for piping included under this Contract, especially at building entrance, as directed by the Water Authority. Thrust blocking shall be installed at all valves, tees, plugs and bends deviating from the straight run in excess of 15 degrees. Blocking shall be placed between the fitting to be anchored and solid, undisturbed earth. Refer to the thrust blocking details. The entire installation shall conform to Water Authority requirements. Confirm requirements prior to bidding.

E. The exterior water systems included under this Contract, shall be thoroughly flushed upon completion of the installations. Combination domestic water/fire service main piping shall be flushed in accordance with NFPA 24 requirements.

2.12 DISINFECTION OF EXTERIOR DOMESTIC WATER SYSTEM

A. Before being placed in service, all exterior water piping, included under this Contract, shall be chlorinated to the satisfaction of the Architect.

B. Prior to chlorination, all dirt, foreign matter shall be removed by a thorough flushing.

C. A water mixture of hypochlorite solution shall be applied by means of a solution-feed device.

D. Treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. This period shall be at least 3 hours and preferably longer as may be directed.

E. After the chlorine treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative points shall be at least 5 parts million.

F. Following chlorination, all treated water shall be thoroughly flushed from the newly installed piping at its extremities until the replacement water throughout its length shall, upon test, be equal to the water quality served from the municipal water supply system.

G. Should the initial treatment, in the opinion of the Architect, prove ineffective, the chlorination procedure shall be repeated until confirmed tests show the water sampled from the newly installed piping conforms to the requirements.

2.13 EXTERIOR DOMESTIC WATER VALVES

A. ***3" and up*** Valves shall be ductile iron body, ASTM A536, 250 psi, bolted bonnet, non-rising stem, square operating nut, resilient wedge, conforming to AWWA C509 and C515, the Nibco F/MJ-619-RW-SON Series, Anvil, Mueller, Kennedy, Clow, American-Darling, or approved equivalent, conforming to Water Authority requirements. ***– OR –***

B. ***Up to 2-1/2"*** Valves shall be Class 125, bronze body, 200 psi screw-in bonnet, non-rising stem, solid wedge, threaded, modified with square operating nut, Nibco T-113 Series, Anvil, Mueller, Kennedy, Clow, American-Darling, or approved equivalent, conforming to Water Authority requirements. Valve shall conform to MSS SP-80.

C. Valves buried in the ground shall be provided with cast iron screw type adjustable valve boxes with cover marked "WATER". Include valve boxes and valve wrenches of proper length.

2.20 VERTICAL DOMESTIC WATER STORAGE TANK FOR STORM SHELTER APPLICATION

A. Furnish and install a premanufactured domestic water storage tank, in accordance with the drawing details. Water storage tank shall be 500 gallon capacity with top and bottom piping connection, as manufactured by Norwesco, INC, or approved equivalent. Inform equipment supplier of described traffic at tank location prior to bidding, for frame and cover loading design.

B. Tank float control system and associated solenoid by ASCO or approved equivalent.

C. Coordinate all structural support of water storage with architect.

D. Tank shall be substantially free from fractures, large or deep cracks, or surface roughness; and shall be sound.

E. Provide all requirements for tank installation as shown on drawing.

F. Provide all parts, pieces, accessories, etc necessary for a complete and functioning installation.

G. Submit detail drawings of the proposed equipment and installation, with layouts of piping

connections and routing.

2.14 EXTERIOR NATURAL GAS SERVICE

A. The exterior natural gas distribution system work shall conform to the National Fuel Gas Code, NFPA Standard 54.

B. Refer to Section 220500, “Excavation and Backfill” for river sand installation around underground pipe included under this Contract.

C. All exterior work under this Contract shall conform with the requirements and regulations of the Gas Company serving the building.

D. Gas piping 1-1/2" and smaller above grade shall be Schedule 40 ASTM A-53 black steel pipe, assembled with 150 lb. malleable iron screwed fittings. All concealed piping shall be joined with welding fittings and Schedule 40 ASTM A-53 black steel pipe.

E. Gas piping 2" and larger above grade shall be Schedule 40 ASTM A-106 seamless black steel pipe, assembled with welding fittings and standard weld neck flanges at valve connections. Schedule 40 ASTM A-53 black steel pipe acceptable.

F. If the Contractor so desires, and allowed by the Gas Company, underground gas piping provided under this Contract shall be minimum SDR 11 polyethylene pipe, conforming to ASTM D2513, purchased from the Gas Company, or as otherwise required by the Gas Company. Pipe shall be similar to the Driscoplex 6500 Series, PE2406, MDPE “CP Chem” polyethylene piping, Plexco, or approved equivalent. Polyethylene piping not permitted above ground.

G. Galvanized pipe and fittings will not be acceptable.

H. Exposed gas piping above grade shall be painted as hereinbefore specified. Refer to “Cleaning and Painting”, Section 220500.

I. Exterior underground gas piping provided under this Contract shall be Republic Steel X-Tru-Coat, or equivalent, plastic coated Schedule 40 ASTM A-53 steel pipe with welded joints, using X-Tru-Tape and primer at each joint; or underground gas piping provided under this Contract shall be minimum SDR 11 polyethylene pipe, conforming to ASTM D2513, purchased from the Gas Company, or as otherwise required by the Gas Company. Methods of joining, type of pipe, burying, tracing and like items shall comply with Gas Company criteria; however, maintain 30" minimum ground cover over top of exterior piping. Polyethylene piping not permitted above ground. Do not use polyethylene gas piping where underground heating system piping may be present. The Contractor shall provide all required cathodic protection for underground steel piping included under this Contract, in accordance with Gas Company rules and regulations.

J. Gas piping shall be sloped not less than 1/4" in 15 feet to prevent traps.

K. Gas service underground at building entrance shall be thoroughly braced per Gas Company requirements.

L. Exterior gas dirt legs not permitted per the National Fuel Gas Code; install gas legs at heated interior of building to avoid condensate freeze-up, in accordance with NFPA recommendations, or as otherwise directed by the Gas Company.

2.15 EXTERIOR NATURAL GAS VALVES

A. Furnish and install all valves necessary to the proper operation of the system. Provide valves at such points as required for the proper control and shut-off of all piping. Each piece of equipment above ground that may have to be removed from the system for repair shall be connected by union or flange, and provided with isolation valves. Gas valves shall be of manufacturer and style as listed on the Gas Company approved materials list. Valves shall be as manufactured by Homestead, Nibco, Apollo, Crane, or approved equivalent.

B. A separate valved gas pipe shall be connected ahead of the building's exterior main gas valve above grade (after the Gas Company's main regulating equipment) and extended to serve the emergency generator set. This shutoff valve must be marked or tagged as supplying the emergency generator. The building's main service gas valve must be marked or tagged with an alert as to the presence of a separate emergency power supply gas shutoff valve. Tags shall be custom printed plastic type, chemical resistant, permanent, weatherproof, white background, black letters, approximately 3-1/4" wide x 5-5/8" high, with nylon self-locking ties, by Seton Name Plate Company, Brady Co., or MSI Services. Gas valve tags must conform with Gas Company's approval. Tag for gas valve serving the generator shall read: "WARNING-DO NOT CLOSE THIS VALVE-SERVES EMERGENCY GENERATOR SET". Tag for building's main service gas valve shall read: "NOTICE-EMERGENCY GENERATOR SERVED BY A SEPARATE VALVED GAS SUPPLY".

C. Provide underground gas valve and adjustable cast iron valve box to grade marked "GAS". Valve shall conform to type of underground piping selection, and shall be approved by the Gas Company. Provide valve wrench of required length.

D. All natural gas valves shall be **full port plug valves,** only, to ensure minimal pressure loss through the valves.

2.16 EXTERIOR NATURAL GAS REGULATORS

A. Furnish and install exterior gas regulators where shown, complete with pressure gauges and gas cocks on inlet and outlet. Regulator shall be as manufactured by Maxitrol, Chaplin-Fulton, or Fisher, of type conforming to Gas Company requirements. Regulator shall conform to ANSI Standard Z21.80. Regulator must provide positive tight shutoff, or positive tight lock-up at zero flow. Provide documentation of BTU and pressure range at FULL LOAD on submittal. Pressure gauges shall be 2-1/2" minimum diameter, with waterproof cases, the Weksler No. 25KL, Trerice, or Ashcroft.. Pressure gauges shall include brass socket, plastic lens, phosphor bronze diaphragm, required pressure range (or as otherwise directed by the Gas Company), 1/4" N.P.T., suitable for reading natural gas.

B. At supply pressures in excess of 2 psi, an overpressure protective device (OPD), approved and tested, shall be required to limit the downstream pressure to 2 psi maximum, in the event of regulator failure, Maxitrol, Chaplin-Fulton, Fisher, or approved equivalent.

2.17 JOINING EXTERIOR NATURAL GAS STEEL PIPE

A. Welded piping may be welded only by acetylene process. Welding shall be performed by certified welders only.

B. Where screw fittings are utilized, for small pipe, field threading shall meet the requirements of ANSI B2.1. Screw joints shall be made up tight using a non-hardening pipe joint compound applied to male threads only.

2.18 DEFECTIVE EXTERIOR NATURAL GAS PIPING

A. When defective pipe or fittings are located in the new system, the defective material shall be replaced. Under no circumstances shall defects in pipe or fittings be repaired.

2.19 EXTERIOR NATURAL GAS PIPING PURGING

A. Prior to establishing gas service, all gas piping shall be fully purged.

2.20 EXTERIOR NATURAL GAS TESTING AND INSTALLATION REQUIREMENTS

A. The exterior gas piping shall be given a pressure test with air or an inert gas before being placed in service, in accordance with Gas Company requirements. Under no circumstances may oxygen, flammable gas or any liquid be used as the test medium. To locate leaks, piping joints should be covered with soapsuds or a leak-finder liquid. In no case shall ether, freon or any gas that will produce a toxic atmosphere when burned, be injected into the piping to locate leaks.

B. Gas piping, as shown by testing, must be free of leaks before being placed in service. All testing shall be done using an approved gauge.

C. All gas piping included under this Contract shall be installed and tested in strict accordance with requirements of the Gas Company. The Contractor shall contact the Gas Company before bidding for service and shall obtain and pay all fees required for work included under this Contract. All fees required by the Gas Company must be included.

2.21 EXTERIOR NATURAL GAS PIPE COLOR CODING / LABELING

A. Color code and/or label exterior exposed gas piping above grade, per Gas Company requirements.

PART 3 - EXECUTION

3.1 INSTALLATIONS

A. All piping and equipment herein specified shall be installed in strict accordance with the manufacturer's installation instructions.

END OF SECTION 221300

SECTION 221316 – SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The sanitary waste and vent piping systems shall be as hereinafter described in this section. Make all required connections into the interior sanitary drainage systems. Refer to Section 221300 for exterior sanitary sewer system.

1.3 CODE COMPLIANCE

A. All sanitary materials and installation methods shall be subject to the acceptability of that material with the prevailing local plumbing codes.

1.4 PIPE AND MATERIALS

A. This Contractor shall furnish and install sanitary sewer and vent piping as indicated on the Drawings. Pipe sizes indicated are minimum sizes. Minimum size below bottom floor or below ground, interior, 4". Pipe sizes shall be larger where required by local codes.

PART 2 – PRODUCTS

2.1 SANITARY SEWER AND VENT PIPING UNDERGROUND, BELOW BOTTOM SLAB, INCLUDING PUMP DISCHARGE PIPING

A. Polyvinyl Chloride (PVC) Plastic Pipe Schedule 40 DWV ASTM 2665 solvent weld. PVC foam core piping and fittings not permitted. PVC pipe and fittings as manufactured by Charlotte, Geneva, Spears, or approved equivalent.

B. High performance coated or Epoxy coated Cast Iron hub and spigot pipe and fittings – ASTM A74. Coated Cast iron pipe and fittings as manufactured by Charlotte, New Age, or Tyler. Coating Performance: Pipe and Fitting Coatings must pass the performance specifications per EN 877. Coated Cast Iron piping systems shall be used in Boiler / Mechanical Room areas, Kitchen / Dishwashing areas, and any high-temperature drainage areas and the piping system shall be used to 20’-0” beyond the area ***OR*** to the exterior of the building ***OR*** to the connection to the existing main.

C. Provide sanitary sewers exiting the building each with vents, house traps, and cleanouts within the limits of sewer construction included under this Contract work, as required by the prevailing plumbing code and /or the sewer authority having jurisdiction.

1. For sanitary mains that exit the building below structural components, piping shall be sleeved and encased in concrete a minimum of 2’-0” beyond of the structural component, on either side. Coordinate specific requirements with structural design prior to installation.

2. For sanitary mains that exit the building through structural components, piping shall be

sleeved through the component. Installation, location, and depth of sleeves need to be strictly coordinated with General Contractor prior to installation.

2.2 SANITARY SOIL, WASTE, AND VENT PIPING ABOVE GROUND, INCLUDING PUMP DISCHARGE PIPING

A. Polyvinyl Chloride (PVC) Schedule 40 Plastic Pipe (DWV) ASTM 2665 solvent weld. PVC foam core piping and fittings not permitted. PVC pipe and fittings as manufactured by Charlotte, Geneva, Spears, or approved equivalent.

B. High performance coated or Epoxy coated Cast Iron Hubless pipe and shall conform to ASTM A-888. Pipe and fittings as manufactured by Charlotte, New Age, or Tyler. Coating Performance: Pipe and Fitting Coatings must pass the performance specifications per EN 877. Coated Cast Iron piping systems shall be used in Plenum areas, Boiler / Mechanical Room areas, Kitchen / Dishwashing areas, and any high-temperature drainage areas and the piping system shall be used shall be used to the non-plenum areas ***OR*** to 20'-0" beyond the area ***OR*** to the exterior of the building (via roof or via underground) ***OR*** to the connection to the existing main.

1. Extra heavy weight coated cast iron hub and spigot soil pipe and fittings, ASTM A74, shall be utilized where required by local codes

C. If Contractor so desires, Copper Type DWV Tube, ASTM B 306, hard temper copper tubing may be used for fixture branch drainage piping, assembled with cast bronze or wrot copper solder end drainage fittings. Copper tubing as manufactured by Cambridge – Lee, Cerro, Nibco, Summit, or approved equivalent.

D. Automatic air vent or relief valve discharge piping shall be Type "L" copper with drainage pattern fittings. Plastic piping and fittings will not be permitted for this installation.

E. Vent piping to atmosphere shall be minimum 3" diameter and terminate a minimum of 12" above roof level. Terminate vent piping at a higher height above roof level where required by local codes. Rigidly support all vent piping extending through roof.

2.3 TEMPERATURE LIMITATIONS – PVC PIPING SYSTEM

A. The Contractor's attention is directed to temperature limitations of PVC pipe and fittings, normally 140 – 150° F. When temperature limitations of conveyed liquid are expected to exceed approximately 125° F, the Contractor shall utilize cast iron pipe and fittings as herein specified. Use coated cast iron piping only as specified where specifically mentioned herein, such as in plenum spaces, and where elsewhere required for temperature limitations.

2.4 JOINTS AND CONNECTIONS

A. Joints for Hub and Spigot Cast Iron Pipe and Fittings Below Grade

1. Joints in cast iron hub and spigot shall be made with either (1) a caulked joint using pig lead and oakum with at least 12 ounces of lead per inch of pipe diameter. Lead shall be run in one pouring; (2) a compression joint using a lubricated neoprene gasket, Mission, Tyler "Ty-Seal"; Charlotte Foundry, New Age, or Tyler. Provide appropriate gaskets for connections and joints as needed, (for example EPDM gaskets) as required for pipe materials.

2. Joints between cast iron hub and spigot pipes and threaded pipes shall be made same as above using a caulking spigot.

3. Joints in threaded pipe shall be made with clean-cut uniform tapered threads, with suitable pipe joint compound.

B. Joints for Hubless Cast Iron Pipe and Fittings Above Grade

1. Joints in hubless cast iron pipe above floor level for building construction one (1) story and less, shall be made with a mechanical coupling composed of a heavy duty Type 304 stainless steel shield and neoprene slip-on gasket, ASTM C-1540, Husky HD 2000, Clamp-All 80. For building construction more than one (1) story, use Husky SD 4000, Clamp-All 80, or approved equivalent, heavy duty couplings. Gauges of equivalents must conform. Hubless cast iron pipe below bottom floor, below ground, below crawl space or walkway floors, or at exterior of building not permitted at any location.

2. Couplings for joining hubless cast iron soil pipe and fittings conforming to ASTM A-888, shall be 3 inches wide for nominal pipe sizes 1 ½ to 4 inches in diameter, 4 inches wide for nominal pipe sizes 5 to 10 inches in diameter, and 5 5/8 inches wide for couplings 12 and 15 inches in diameter. Couplings to be by Charlotte Foundry, New Age, or Tyler. Provide appropriate gaskets for connections and joints as needed, (for example EPDM gaskets) as required for pipe materials. Shields shall have a minimum thickness of .015 inches, (28 gage) type 304 stainless steel. Worm drive clamps shall be type 304 stainless steel with a minimum clamp torque of 80 in/lbs. Sealing Gasket shall be neoprene conforming to ASTM C-564. Couplings shall conform to Factory Mutual Standard 1680, Class 1, or ASTM C-1540, as manufactured by Clamp-All Products Models HI-TORQ 80 and HI-TORQ; or Huskey Technologies Model SD-4000.

a. Alternative to above, cast iron split clamps secured by stainless steel bolts and nuts with neoprene gasket conforming to ASTM C-564; as manufactured by MG Coupling Company.

b. Factory Mutual Approved Couplings may be hung with one hanger per length of pipe for 10 foot lengths and at every third fitting where they are contiguous in conformance with manufacturers installation instructions.

C. Joints between copper tubing and threaded pipe shall be made with brass soldered to screwed converter fittings. Fittings for copper tubing by Nibco, Cambridge-Lee, Mueller, Elkhart

D. Joints in PVC pipe shall be accomplished with socket type fittings and solvent-cement welding for the interior DWV System, above floor or below bottom floor.

E. All transition joints in sewers between dissimilar materials or unequal sizes shall be made water and gas tight by means of an approved connection or adapter of the compression or mechanical seal type. The connector or adapter shall be manufactured of preformed Elastomeric Polyvinyl Chloride conforming to ASTM Standards C-425, C-594, C-564, and D-1869. Couplings of the mechanical seal type shall have tightening clamps or devices made of 305 stainless steel. The compression joint connector or adapter and flexible coupling shall be installed as recommended and specified by the manufacturer and each connector shall bear the manufacturer's name clearly visible when installed, such as manufactured by Fernco Joint Sealer Company, Indiana Seal, or Mission

F. All joints shall be made permanently gas and water tight.

G. The use of any of the above joints and connections shall be subject to their acceptability with the prevailing local plumbing codes.

H. For above and below ground drainage piping changes in direction - bends, sweeps, tees, and/or wyes shall be installed per the IPC, Section 706, or applicable local plumbing code, for horizontal-to-horizontal, vertical-to-horizontal, and horizontal-to-vertical direction changes. Fitting types shall be uniformly used throughout the project.

2.5 FLOOR DRAINS

A. The Contractor shall furnish and install the following types of floor drains, by Zurn, Josam, Smith, Mifab, Wade, or Watt. Refer to "Tamperproof Screws", Section 220500. Coordinate all strainer shape, configuration, and design with floor finishes and architect prior to submittal. All drains shall have 1/2" trap primer connections as shown on the drawings. Plug any unused primer connections. ***– OR –*** All drains shall have associated Trap Seals for evaporation protection.

1. FD-1 – Zurn ZN415-BZ1-P-VP Series, bottom outlet, coated cast iron body with polished nickel-bronze leveling strainer, ZN400BZ-VP, Type BZ, vandal-proof, or approved equivalent. Strainers in shower rooms and locker rooms shall be 8" size. All other strainers shall be 6" size. (Finished Areas)

2. TD-1 – KS100 - KLASSIKDRAIN - LOAD CLASS: A by ACO, Inc, including stainless steel ADA perforated grate 451D as selected by architect and owner. Include all parts and pieces required for a complete and functional installation. Coordinate all installation requirements with manufacturer prior to installation. Provide matching outlet components. Trench drain system shall be installed in accordance with City codes and the installation instructions of the trench drain manufacturer.

3. HUB DRAINS – shall be constructed of same piping materials as utilized for system piping. Set each hub drain over a P-trap.

B. All floor drains in floor construction shall be set over P-traps, except exterior drains and shall be furnished and installed with flashing flanges and clamping collars.

1. P-traps with trap primer connections will be acceptable in lieu of floor drains with primer connections.

C. The Contractor shall check with the Local Plumbing Inspector for setting of tops of all floor sinks and funnel/floor drains relative to finish floors.

D. The Contractor shall coordinate with finished flooring materials to confirm if any additional accessories, including clamping, bracing, etc., for all drains prior to submittal shall be required.

2.6 CLEANOUTS

A. The Contractor shall furnish and install cleanouts at each change in direction greater than 45° in sanitary drainage systems, at the base of all sanitary drainage stacks, and at all other points indicated on the Drawings.

B. Cleanouts installed on under-floor piping, exterior piping, or piping below slab on grade floors shall be extended to floor level or grade level with 45 degree fittings.

C. Cleanouts on concealed piping shall be extended so as to be easily accessible from finish floor, ceiling, or wall.

D. Cleanouts shall be full pipe size up to and including 4", and shall be 4" on larger size piping, if approved by the local authorities having jurisdiction over the installations.

E. All cleanout equipment shall be Zurn, Josam, Smith, Mifab, Wade, or WattS. Refer to "Tamperproof Screws", Section 220500.

1. Zurn ZN1443-VP / ZN1447-VP – Cleanout with nickel-bronze access cover with vandal-proof screws, for all piping concealed. For all locations other than where access panels or doors are noted. Plastic, PVC, or fiberglass type cleanout covers not acceptable.

2. Zurn ZN1400-5BZ1-VP – Adjustable floor cleanout with round top, vandal-proof screws. Zurn ZN1400-X-VP – for vinyl tile; ZN1400-Z-VP – for 1-1/4" terrazzo, vandal-proof screws; ZN1400-CM-VP – for carpet installation, vandal-proof screws.

3. Zurn Z1400-HD-VP – Adjustable exterior extra heavy-duty round cleanout, vandalproof screws, cast bronze plug, set in concrete slab, 24" x 24" x 6" thick. Provide nickel-bronze finish cleanouts at any finish entrances or exits of building. Refer to the drawing details.

F. For cleanouts on PVC piping above floor level, cleanouts shall be PVC threaded plugs in wye fittings. For cleanouts on cast iron piping above floor level as described herein, cleanouts shall be cast bronze threaded plugs in wye fittings.

G. Floor cleanouts in interior heavy duty traffic areas, shops, equipment rooms, boiler rooms, janitor's closets, and storage rooms shall be cast bronze flush floor plugs, Zurn ZARB-1470-PW, or approved equivalent. Provide two (2) plug wrenches only, total.

H. Floor cleanouts shall be furnished and installed with flashing flanges and clamping collars. Floor cleanouts on the bottom-most slab shall not require flashing.

I. Where vertical piping is installed in chases in finished rooms, extension pieces, if required, shall be placed in tees so as to bring cleanout plugs to the back of the cover plate set flush in the finished walls.

J. Except where cover plates are provided with a recess for inserts of the same material as the floor finish, all cover plates in floors of finished areas shall be scoriated nickel bronze. Frames for the cover plates shall be compatible with the finished flooring material.

K. Care shall be exercised in installing cleanouts to avoid locating them in surfaces to be carpeted. Provide additional piping as required to locate cleanouts in other more accessible surfaces.

L. The Contractor shall lubricate all plugs before installation and shall loosen all covers and plugs before final inspection as directed by the Architect.

2.7 TRAPS

A. Service weight or extra heavy weight cast iron, or PVC, shall be used in accordance with applied piping system.

B. A separate trap shall be provided for each plumbing fixture which does not contain an integral trap. In general, all fixture traps shall be provided with accessible cleanout plugs located on the bottom of the bend.

C. Traps shall be set true with respect to their water seals.

D. Refer to Section 221300 for exterior house traps and related cleanouts and vents.

2.8 TRAP PRIMERS

A. Standard type trap primer shall be the Zurn No. Z1022-XL, Josam, Smith, PPP, Mifab, Wade, or Watts, plain bronze body, automatic, 1/2" in/out, with integral vacuum breaker, non-liming internal operating assembly, with gasketed bronze cover. Provide trap primer piping to all floor drains, regardless if piping shown or not on drawings. Valve the inlets to the trap primers. Refer to the drawing details.

1. Provide trap primer distribution units,where more than one floor drain is primed, Zurn DU Series, Precision Plumbing Products, Inc., or Sioux Chief, with supply tubes.

B. Electronic type trap primer (ETP-1) shall be the Zurn No. 1020 Series, Precision Plumbing Products, J.R. Smith. Designate required number of outlets to equipment supplier. Trap primer shall be programmed as standard to provide a six (6) second water injection to traps every twenty–four (24) hours, complete with galvanized steel combination surface or recess mounted box as shown, with cover, 1/2" solder copper inlet connection, brass ball type stop valve, slow closing 24V AC solenoid valve with integral strainer, 120V-24V AC transformer, brass atmospheric vacuum breaker, PEX waterway, and an anti-scaling multi port manifold with five (5) PEX connection outlets. Cap unused outlets. Mount trap primer with bottom of unit approximately 36" above finished floor. Valve the inlet to the trap primer unit if inlet valve is not furnished with the unit.

C. Provide trap primers for all interior drains shown on the plans, regardless if shown on the drawings or not.

2.9 TRAP SEALS

A. Furnish and install for each floor drain a manufactured trap seal, to provide for sewer gas emission protection, the Zurn ZSHIELD Z1072, ProSet, Mifab, Smith. Prior to ordering, the Contractor must confirm that the installation of trap seals conforms to national, local, and State plumbing and building code requirements. Trap seals shall be of types recommended by the manufacturer for the particular installation.

B. Trap seal material shall be of elastomeric flexible PVC, which shall never lose its curl seal; seal must be of type that maintains its memory. Trap seal shall be of type that maintains memory when subjected to temperatures of 200° or more. Trap seal shall be capable of handling a flow rate of at least 30 GPM. Trap seal shall be of type that will not allow lime scale build-up.

2.10 FRESH AIR INLETS

A. Fresh air inlets shall be the Zurn ZANB-1472-VP, Josam, Smith, Mifab, Wade, or Watts. Fitting shall be round, nickel-bronze, with secured, vandalproof cover and 4" threaded connection. Include stainless steel insect screen beneath cover. Provide any required reducers.

2.11 AIR ADMITTANCE VALVES

A. Valves shall be the Studor, Inc. "Mini-Vent" or "Maxi-Vent", RectorSeal. Valve must be installed in a vertical position. Obtain approval from local Plumbing Inspector prior to ordering or installation. Order valve specifically to type of piping involved.

2.12 BACKWATER VALVES

A. Zurn No. Z1095, Josam, Smith, Wade, or Watts, coated cast iron body, hub inlet and offset spigot outlet, order – ¾" open, bronze threaded cover, with extension to floor level.

2.13 UNDERFLOOR PIPE SLEEVES

A. Underfloor pipe sleeves for water or air piping, where shown or required, shall be constructed of 4" diameter minimum size Schedule 40 PVC piping and fittings. Split piping and fitting systems will be acceptable.

B. Underfloor pipe sleeves for gas piping shall be constructed of Schedule 40 ASTM A-53 black steel pipe with welded joints; plastic coated, or taped and wrapped to prevent corrosion. Installation must conform to Gas Company requirements. Vent the sleeves to exterior of building per Gas Company requirements.

PART 3 – EXECUTION

3.1 PIPE PREPARATION AND INSTALLATION

A. Review the proper procedures and methods for coated cast iron installation with the piping system manufacturer. Provide Pipe End Protection as required by the Cast Iron Piping Supplier for all pipe and fitting connections and applications for a thorough and uniform coating throughout the drainage piping system.

3.2 GRADE

A. Elevations and locations of floor drains, funnel drains, floor sinks, and cleanouts shall be adjusted to avoid interference with other utilities and equipment without additional expense.

3.3 FLASHING

A. Provide 48" square sheet lead, copper, or neoprene flashing for floor drains, funnel drains, floor sinks, and cleanouts, set integral with floor slab. Chloroloy, or approved equivalent non-plasticized chlorinated polyethylene waterproofing membrane will be acceptable for flashing of floor drains, funnel drains, floor sinks, and cleanouts.

B. Vents through new roof construction will be flashed by the General Contractor. Openings, patching, restoring, and flashing in existing roof by Roofing Contractor at Plumbing Contractor's expense.

3.4 INSTALLATION AND TESTING PROCEDURES

A. Horizontal cast iron pipe and fitting installations above ground, 6” and larger, shall be suitably braced to prevent horizontal movements, at every branch opening or change of direction, by the use of braces, blocks, rodding, or other suitable method, in accordance with pipe manufacturer’s and Cast Iron Soil Pipe Institute’s installation instructions. Vertical cast iron pipe and fitting installations above ground of all sizes shall be secured at each stack base and at sufficiently close intervals to keep the system in alignment and to adequately support the weight of the pipe and its contents.

B. Unless noted otherwise on the Drawings or herein specified, or required to suit final floor elevations, all sanitary piping 3” and larger shall be installed with a uniform minimum slope of 1/8" to the foot and all sanitary piping 2” and smaller shall be installed with a uniform minimum slope of 1/4" to the foot, or as otherwise required by local codes.

1. All Kitchen Area grease waste piping shall be installed with a uniform minimum inlet/branch outlet slope of interceptors of 1/4” to the foot.

2. Maintain 30” minimum ground cover over top of exterior sewers.

C. Interior sanitary drainage piping shall be hydrostatically tested after completion of the roughing-in. Piping being tested shall be filled to the top of vent pipes, and left standing for a period of one (1) hour with no loss of water. Smoke tests will be acceptable if required by local authorities. Confirm requirements prior to bidding.

D. After testing and before final acceptance, the Contractor shall completely flush the entire sewer systems and appurtenances included under this Contract in sufficient volume to remove all settlement and debris to obtain free flow through each pipe. Flushing shall be accomplished by the use of automatic flush tanks, fire hoses, or other means approved by the Architect. Depths of water and velocities shall be as required to produce a hydraulic bore. Remove all obstructions and correct all defects discovered.

E. Exercise extreme care to prevent debris from entering floor drains or cleanouts. Carefully check invert elevations of floor drains to which connections are to be made.

F. Inform the Owner’s maintenance personnel of the proper methods of cleaning out all interceptor types.

G. For decontamination tank, inform the Owner’s maintenance personnel of the frequency necessitated to keep the unit cleaned, and the proper methods of cleaning the unit.

3.5 THERMAL EXPANSION AND CONTRACTION – PVC PIPE

A. Highly important is the change of PVC pipe with temperature variations. This fact shall always be considered when installing PVC pipe piping, and allowances made accordingly.

B. Compensate for PVC piping thermal expansion and contraction in accordance with PVC manufacturer’s instructions and local code requirements. Utilize the following, but not limited to: offsets, loops, additional bends, piston type expansion joints with “O” ring design, and axial guides. Expansion joints must be accessible.

3.6 FINAL INSPECTION

A. At the time of final inspection of the work performed under the Contract, the floor drains and cleanouts shall be complete in every respect and in perfect operating condition. All surplus materials of every description resulting from the work shall have been removed. Floor drains shall be free from debris, sand, silt or other obstructions. Any defects discovered in the floor drains, floor sinks, funnel drains, and cleanouts subsequent to this inspection shall have been corrected.

B. Inform Owner's Operating Personnel to properly maintain trap seals, and periodically flush trap seals with fresh water to clear any foreign objects.

END OF SECTION 221316

SECTION 223300 – DOMESTIC WATER HEATING EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. Furnish and install gas-fired domestic water heater, complete with expansion tank, equipment and associated accessories, as shown on the Drawings

B. Furnish and install electric point-of-use water heater as shown on the Drawings.

1.3 CODE COMPLIANCE

A. Water heater shall be installed in accordance with and shall meet or exceed the energy efficiency requirements set forth by applicable portions of The International Energy Conservation Code, and all applicable state, federal, and local codes having jurisdiction.

PART 2 - PRODUCTS

2.1 DWH-1 – Gas-Fired Domestic Water Heater

A. Natural gas water heater shall be A.O. Smith Cyclone HE Model No. BTH series, Lochinvar Shield Series, State Premier Series, American Standard HE Series, series, with up to 90% thermal efficiency, maximum hydrostatic working pressure of 160 PSI. Cement-lined Hubbell GSE series shall also be acceptable. Refer to the schedule shown on drawings for capacities.

1. Seamless glass-lined steel tank construction, with glass lining applied to all water-side surfaces after the tank has been assembled and welded.

2. Spiral-shaped heat exchanger placed entirely inside the tank, which shall be glass-lined to protect against acidic flue gas condensate.

3. Foam or fiberglass insulation and an ASME-rated temperature and pressure relief valve.

4. Down-fired power burner designed for precise mixing of air and gas for optimum efficiency, requiring no special calibration on start-up.

5. Integral control panel with touch-screen LED display and BACNet interface capabilities and connections. Plumbing Contractor to coordinate specific monitoring points and requirements with Building Owner and BMS supplier as a part of installation.

6. Have advanced electronic controls. Furnish Owner with sufficient fully illustrated instruction manuals and part lists for the heater.

B. If water heater exceeds 119 gallons storage, and/or burner exceeds 199,000 Btu/hr input, tank must meet ASME ratings.

C. Heater shall be supplied with an anode. Extend condensate drain piping and terminate over nearest drain.

D. Heater shall include an electronic Intelli-Vent gas control valve, equipped with a premium grade silicon nitride hot surface ignitor, or equivalent. This valve shall feature advanced electronic circuitry for precise temperature control and LED display of temperature settings and diagnostic codes for easy temperature adjustment and troubleshooting.

E. The heater shall be suitable for sealed combustion direct venting using PVC or CPVC exhaust pipe and PVC or CPVC intake pipe, or other pipe as recommended by the manufacturer, complete with factory terminal fittings. Exhaust and intake piping shall be extended and terminated at exterior of building as shown, in strict accordance with heater manufacturer's installation instructions. PVC pipes shall not be installed above ceilings where ceiling plenums are used to return air. Use metallic piping or suitable flame/smoke rated piping.

F. Furnish and install an expansion tank for the heater, of suitable capacity for the heater, of type specified.

G. Provide and install a concentric vent arrangement, as instructed by manufacturer, for water heater. Concentric termination shall be AO Smith Part # 9006328005.

2.2 EWH-1 – ELECTRIC INSTANTANEOUS WATER HEATER

A. Water heater(s) shall each be by Chronomite, Eemax, AO Smith. Refer to the schedule shown on drawings for capacities and specific model number(s).

B. Furnish Owner with sufficient fully illustrated instruction manuals and parts lists for the heater.

C. Unit shall be installed with manufacturer specific or recommended disconnect switch, within casework. PC shall provide all wiring between disconnect switch and heater. Power to disconnect switch by EC. Coordinate all electrical information between PC and EC prior to work.

2.3 EXPANSION TANKS

A. Furnish and install an ASME expansion tank for the hot water system, potable type, similar to the Watts DETA Series, Wessels Company, or Amtrol, of required capacity. Tank shall be precharged, field adjustable, carbon steel, with FDA approved bladder, stainless steel system connection, and charging valve. Tank must be constructed in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code, with prime painted exterior. Insulate expansion tank as specified. (Heater shall also be furnished with an expansion tank as shown and hereinbefore specified and shall also be insulated as specified.) Expansion tanks shall each be furnished with an ASME pressure relief valve as designated by the Pennsylvania Department of Labor and Industry regulations. Valve inlets to each tank.

2.4 RELIEF VALVES

A. Refer to Section 220523, "Domestic Water Valves".

PART 3 - EXECUTION

3.1 INSTALLATION

A. Furnish and install thermometers and pressure gauges at locations shown or specified for the water heating piping and equipment, of types specified.

END OF SECTION 223300

SECTION 224000 – PLUMBING FIXTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

A. The plumbing fixtures, trim, accessories, and miscellaneous equipment shall be as shown on the drawings. Additional manufacturer's names of fixtures, trim, and miscellaneous equipment shall be listed herein.

B. All plumbing fixtures and trim shall be new and of the best quality. All fixtures shall bear the manufacturers' guarantee label or trademark, indicating first quality.

C. **ALL** fixtures and associated trim, including traps, stops, faucets, flush valves, etc., shall be 'Lead Free' or 'No Lead' and shall be documented as such as part of the submittal process.

D. All vitreous china, cast iron, and prefabricated fiberglass, polyethylene, acrylic, or polypropylene fixtures shall be white and all fixtures of all types shall be specially selected, free from cracks, chips, flaws, stains and warping, and other defects. Fixtures shall be replaced by the Contractor, and the guarantee period on such replaced fixtures shall be extended for the full term of the guarantee from the date of replacement.

E. The Contractor shall refer to the Drawings for the quantities of plumbing fixtures of each kind to be furnished.

F. Provide adapters on all final piping connections to equipment furnished under other contracts or by the Owner.

G. All fixtures and trim shall be as listed below. Confirm requirements of all fixtures, trim, and manufacturers with Owner prior to ordering. Trim shall be commercial grade.

1. Water Closets, Urinals, Lavatories, and Clinic Sinks – Zurn, American-Standard Brands, Kohler, or Sloan.

2. Utility Sinks – Zurn, Florestone, or Fiat

3. Electric Water Coolers / Bottle Fillers – Oasis, Elkay, Haws, Murdock, Halsey Taylor

4. Lavatory / Sink Faucets – Zurn, Chicago Faucet, Speakman, or T&S Brass

5. Utility Sink Faucet/Eyewash Units – Speakman, Guardian, or Haws

6. Fixture Support Carriers – Zurn, Josam, Smith, or Watts

7. Waste/Trap Assemblies – Zurn, McGuire, or Kohler

8. Water Supplies/Stops – Zurn, McGuire, or Kohler

9. Insulation Kits – Zurn, McGuire, or Truebro

H. All fixtures and equipment shall be properly trapped in accordance with local code requirements.

I. All exposed piping to fixtures shall be chrome plated. Chrome traps and chrome tubing shall be 17 gauge minimum. All traps of all types, exposed and accessible concealed, shall each include cleanout. Chrome finishes shall not be required for fixtures that require insulation kits.

J. All escutcheons shall be chrome, cast brass, set screw type, including on drain assemblies, water supplies at fixtures, and including piping inside fixture cabinets.

K. Plumbing Contractor shall furnish templates to General Contractor for cut-out work for built-in sinks and lavatories. Confirm available cabinet sizes with the General Contractor or Equipment Supplier prior to ordering counter sinks or counter lavatories of any type.

L. Rigidly secure shower head supply piping so that heads do not move. Use copper eared tube hangers, locking tube nuts, secured shower riser fittings, or shower arm support adapters, as manufactured by Sioux Chief Manufacturing, or approved equivalent.

M. Rigidly secure flush valve supply piping so that valves do not move. Include suitable piping support adapters, as manufactured by Sioux Chief Manufacturing, or approved equivalent. Split ring chrome flush valve supports acceptable.

N. Supply piping to fixtures, faucets, shower heads, wall hydrants, and hose bibbs shall be securely anchored to prevent movement.

O. All ADA water closet flush valve (or tank flushing) handles shall be mounted on wide side of toilet areas.

P. Disabled sink and disabled lavatory basin guards will be included under the General Contract.

Q. Contractor shall coordinate all installations with Architectural Drawing elevations and ADA required clearances.

R. Wiring with conduit from transformers above ceiling to sensor-operated equipment shall be furnished and installed under the Plumbing Contract; refer to Section 220500.

PART 2 - PRODUCTS

2.1 FIXTURES

A. EWC-1 – Electric Water Cooler with Bottle Filler – ADA Height

1. Elkay No. LZS8WSSP, Wall Mount ADA Cooler Filtered Refrigerated Stainless with Bottle Filling Station. Chilling Capacity of 8.0 GPH (gallons per hour) of 50□ F drinking water, based on 80□ F inlet water and 90□ F ambient, per ASHRAE 18 testing. Features shall include Filtered. Furnished with Flexi-Guard ® Safety Bubbler. Electronic Front and Side Bubbler Pushbar activation. Touchless Bottle Filling station mounted on top of fixture, ezH20, with sensor activation. Product shall be Wall Mount (On Wall), for Indoor

applications, serving 1 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. Mount at standard height.

a. Fixture shall also include a manufacturer's skirt assembly for compliance with ANSI accessibility guidelines for the blind. Skirt shall comply with ADA. Unit shall be complete with all mounting hardware and shall be installed by the Plumbing Contractor. Elkay Model LKAPREZL

2. Filter – Elkay Model 51299C Filter media includes chlorine, taste, odor and lead reducing element.

3. Fixture shall have ADA apron when unit is installed and exposed on walls.

B. L-1 – Wall-Mounted Bowl with ***Manual*** Faucet – ADA Height

1. Zurn No. Z5364 vitreous china wall hung lavatory, 20" x 18", with faucet holes on 4" centers. Fixture shall be provided with hanger plate and holes for concealed arm carrier systems. Mount at ADA Height.

a. Zurn Series Z1231-79 carrier. Use Z1231-D-79 carrier where back-to-back installation is practical. The Zurn "EZ Set" lavatory support system will be acceptable. Zurn "CB" carrier bank supports acceptable.

2. Drain shall be Zurn No. Z8746-PC flat perforated strainer drain with 1-1/4" offset tailpiece.

3. P-Trap assembly shall be Zurn No. Z8701-9-PC, 1-1/4" x 1-1/2", with cleanout.

4. Water supplies shall be Zurn Z8800-XL-LRLK-PC. Brass ball valve type "convertible" stops acceptable.

5. Zurn No. Z8946-3-NT ADA compliant insulation kit for waste and hot and cold water assemblies, vandal-resistant; when exposed to users.

6. Faucet shall be Zurn Z81101-3M-XL, 'Lead Free' center-set with vandal resistant lever handles and Omni or equivalent vandal-resistant 0.5 GPM faucet outlet fitting.

C. US-1 – Wall Mounted Utility Sink

1. Fiat model FL-1 single bowl, wall mounted, polypropylene construction, approximately 23" x 21-1/2" in size, appliance white, or of color selected by the Architect. Unit shall include dual handle deck faucet, along with wall mounting brackets with hardware and filler panels. A fiberglass constructed sink will be acceptable.

2. Drain and tailpiece assembly and drain plug.

3. 1-1/2" chrome adjustable P-Trap and waste to wall with escutcheon.

4. 1/2" water supplies with Zurn loose key stops.

5. Delta 2121LF faucet, 'Lead Free' deck mounted chrome faucet, 4" spread, swivel 360 degree spout. Provide vacuum breaker, with ¾" hose thread outlet. Provide inlet shanks, required for installation.

D. WC-1 – Floor-Mounted Pressure-Assist Flush Tank Water Closet – ADA Height

1. Vitreous china Zurn Z5560-VL, pressure-assist, 1.6 gpf, high bowl, two piece, elongated, floor outlet, close coupled, complete with tank cover locking device, floor mounted siphon jet action tank closet, 12" rough-in, with bolt caps. Polished chrome flush actuator. Fixture and trim shall be ADA compliant. Provide actuator on wide side of toilet areas, respectively.

2. Zurn No. Z8800CRLKCE-PC chrome water supply with loose key stop and cast brass set screw escutcheon.

3. Zurn Z5955SS-EL-AM-STS, heavy duty, anti-microbial, commercial grade, open front, plastic seat less cover, with self-sustaining stainless steel concealed check hinges.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All fixtures, trim, accessories, and equipment shall be assembled and installed according to manufacturers' recommendations in a neat and workmanlike manner.

B. Thoroughly clean all fixtures, trim, accessories, and equipment installed under this Contract.

C. Refer to the Architectural and Plumbing Drawings for scheduled mounting heights and clearances for fixtures and equipment. Particular attention is directed to mounting and clearances for ADA fixtures.

D. Upon completion of this Contract, the Plumbing Contractor shall furnish the Owner's maintenance personnel with a Supplier faucet repair kit furnished by the approved faucet supplier.

E. Caulk with white silicone sealant caulk on all wall and floor contact edges on all fixtures, or of color caulk selected by the Architect. Caulk shall be of suitable type which can be painted.

F. Set lavatory and sink mixing valves as indicated or as directed by the Owner.

G. Adjust water cooler flow regulators for proper flow and stream height. Adjust to obtain maximum useable pressure at each water cooler. Adjust water cooler temperature settings.

H. Individual mixing valves shall be utilized at certain fixtures and equipment receiving hot water as designated; refer to Section 220523 regarding mixing valve specifications. The Plumbing Contractor shall verify exact requirements, quantities, and locations of mixing valves with the local Plumbing Inspector prior to ordering or installation.

END OF SECTION 224000

SECTION 312000.5 - EARTH MOVING

PART 1 GENERAL

1.01 SCOPE

A. This section of the specifications includes all labor, supervision, equipment, tools, materials, transportation and all means of construction necessary to perform the excavation, trenching, backfilling and finish grading as shown on drawings, described in this specification, or as is necessary to install new materials or equipment and to complete the project in a first-class manner.

B. Work includes, but is not limited to the following:
1. Earthwork as required by each Prime Contractor's Contract.
2. Coordinate excavation and trenching with the General Contractor.
3. Comply with all laws, regulations and guidelines regarding soil erosion control at all disturbed areas under each respective Contract.

1.02 CONTRACTOR'S RESPONSIBILITY

A. It is the intent of these specifications to produce satisfactory stable fills and embankments, and these specifications shall be considered minimum requirements which shall be supplemented by the Contractor with additional work if necessary, in order to secure stable fills and embankments.

B. In addition to satisfying and complying with all other requirements, conditions, and provisions contained in the contract documents, the Contractor shall, without extra compensation, reconstruct all fills and embankments that are displaced by any reason or cause whatsoever during their construction or within one (1) year after the entire contract work is completed and accepted.

1.03 RELATED WORK INCLUDED IN OTHER SECTIONS OR CONTRACTS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Divisions 00, 01, and 02 of these Specifications.

B. Cast-In-Place Concrete - Section 033000.5.

C. Lawn Repair - Section 329200.5.

1.04 CODES AND REGULATIONS

A. The Contractor shall comply with the Federal Occupational Safety & Health Act (OSHA) requirements for excavation, trenches, and earthwork.

1.05 SUBMITTALS

A. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

B. Test Reports: Submit certified laboratory test reports as necessary to show compliance with specified

requirements.

C. Test Reports / Submittals on construction materials (i.e.: aggregates, soils) are to be dated no later than one year prior to construction starting date of this project..

D. Three (3) samples of all aggregate base and fill materials.

E. Compilations of all Construction Testing as specified herein shall be submitted with the Contractor's Closeout Submittals as specified in Section 017700.

1.06 CONTRACTOR'S TESTING LABORATORY/AGENCY

A. The Contractor shall retain and pay for the services of an independent qualified laboratory/agency to perform initial and final subgrade evaluations (proof roll), sampling, testing and inspecting of materials entering into the placing of compacted, controlled fill, finish grading materials, utility backfills, and other services as required for quality control. Such laboratory/agency shall be submitted to the Architect for approval.

B. Quality Assurance:
1. The testing laboratory/agency will be qualified to the Owner's approval in accordance with ASTM E329-21 "Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection."
2. Earth work testing and inspection must be performed under the supervision of a qualified person with a degree in geology or civil engineering.
3. Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

1.07 TEST REQUIREMENTS

A. In-place compaction density tests shall be performed on all fill materials. Tests shall be performed in locations and in quantities as selected by the testing laboratory/agency. The Contractor shall include in the amount of the Base Bid, the number of compaction tests required to comply with the following frequencies:
1. Fill and backfill material within the building footprint and 10'-0" beyond: compacted to 95% of maximum dry density, at moisture content within 2% of optimum, per Modified Proctor Test ASTM D1557 - minimum of one (1) test location per every lift per 500 square feet.
2. Fill and backfill material within site areas to be surfaced and minimum 3'-0" beyond (10'-0" beyond any structure footprint): compacted to 95% of maximum dry density, at moisture content within 2% of optimum, per Modified Proctor Test ASTM D1557 - minimum of one (1) test location per every lift per 2,000 square feet.
3. Fill and backfill material within non-surfaced areas 10'-0" beyond the building footprint: compacted to 90% of maximum dry density, at moisture content within 3% of optimum, per Modified Proctor Test ASTM D1557- minimum of one (1) test location per lift per 5,000 square feet.
4. Fill and backfill material within trenches: Place in 6" loose lifts and compact to density as required above dependent upon location of trench - minimum of one (1) test location per every two vertical feet (2'-0") per fifty lineal feet (50'-0") of trench on center.

B. Three (3) copies of said test results shall be submitted to the Architect's office with required

accompanying information (i.e., Project Name, Testing Agency Name, Prime Contractor Name, date and location of test).

1. The Contractor's testing agency shall electronically distribute, in advance of hard copy mailing, to the Architect and the Owner's Representative, all test reports within 24 hours of testing. Under no circumstances shall the Contractor remove the Architect and/or Owner's Representative from the electronic and/or hard copy distribution of test reports or change the specified frequency of testing. Electronic address(es) for the Architect and the Owner's Representative will be issued during the Initial Job Conference meeting.
2. Compilations of all Construction Testing as specified herein shall be submitted with the Contractor's Closeout Submittals as specified in Section 017700.

C. Verification, inspection and testing of soils and aggregates shall also be in compliance with the 2021 IBC (including, but not limited to, Section 110 Inspections and Chapter 17 Special Inspections - Sections 1704 and 1705, specifically 1705.6 Soils, including Table 1705.6, as applicable to this specific project). In case of conflict between any of the above requirements and the IBC, the more stringent requirements shall govern.

1.08 BASIS OF CONTRACT

A. The excavation work shall be performed on an "Unclassified Basis", that is, the removal of soil, shale, rock formations regardless of type or hardness of such formations, existing foundations, abandoned septic tanks, construction debris, fill, topsoil, deleterious material, and every kind of subsurface condition encountered in the Contract area, which includes conditions below the footing elevations - the cost of such excavations being included in the contract price at the time of bidding. No extra or additional compensation for excavation will be paid under this Contract. Contractor must assume all risks in excavating and make his own investigation of sub-surface conditions. Such investigations may be performed only under time schedules and arrangements approved in advance by the Owner.

1.09 QUALITY ASSURANCE

A. A Pre-Installation Conference shall be held at the job site prior to any earthwork on-site. The purpose of this meeting shall include, but not be limited to, a discussion on the coordination of all Prime Contractors and evaluation of field conditions. In addition to the Project Architect, Each Prime Contractor, his earthwork subcontractor, and his testing agency shall attend the Pre-Installation Conference along with the building Owner's Representative.

1. A second Pre-Installation Conference shall be held prior to finish grading and the placement of topsoil and subsequent seeding as specified in Section 329200.

B. Contractors shall coordinate all excavation requirements with the General Contractor.

C. It shall be the Contractor's responsibility to contact utility companies prior to any construction as the locations of utilities shown on the plans are approximate and possibly incomplete. Contractors shall call 1-800-242-1776 (PA One-Call) three days prior to earth work activity on the Project Site.

1.10 SHORING AND PROTECTION

A. Provide all shoring and bracing necessary to prevent cave-in until the backfilling is completed. Erect and maintain fences, guard rails, lights and such other protection as may be necessary for safety and for the protection of the property of the Owner, as well as the property of others.

B. Any surcharged loads from equipment that would be applied to soils near existing foundations, temporary shoring, excavations, etc., shall be determined and verified by the Contractor prior to use. Should the verification require an engineer, the engineer shall be hired by and paid for by the Contractor. The Contractor shall reinforce, as necessary, temporary shoring prior to bringing any additional equipment on site and near the excavation.

1.11 BLASTING

A. No blasting shall be performed on the Project Site.

1.12 ENGINEERING LAYOUT

A. Prior to beginning any excavation or grading work, the Contractor shall have a Registered Engineer and/or Surveyor establish all construction lines, utility lines, finish grades and elevations for location and construction of the Project. Information shall be provided to the General Contractor to incorporate into his comprehensive as-built site plan.

1.13 PRECAUTIONS

A. Do not damage or disturb any existing monuments, benchmarks, or other markers. Provide suitable protection where required before starting work. Restore any damage to original condition or repair as directed at no additional cost.

B. The Contractor shall execute excavation work in a manner to ensure existing building against any damages resulting therefrom. If at any time, the integrity of existing building and foundation appears to be endangered, the Contractor shall cease operations and immediately notify the Architect and Owner, at the same time taking all necessary precautions to support such areas as may be affected. If the Architect and/or Owner considers additional bracing, underpinning, or shoring necessary to safeguard existing structure, the Contractor shall be responsible for installing bracing, underpinning, or shoring at the Contractor's expense.

C. Any piping or conduit encountered shall be temporarily supported and maintained until permanent support is restored, or piping and conduit to be removed shall be cut off and capped outside the limits of excavation.

PART 2 PRODUCTS

2.01 SHEET PILING

A. Sheet piling, wood or steel and all bracing, shoring or sheeting as required or necessary to conduct the work safely, retain the excavation, and prevent damage to existing structures, and to complete the work, shall be furnished and installed by the Contractor.

2.02 ON SITE MATERIALS

A. Existing excavated soil material from the site may be used for fill and backfill material within non-surfaced areas to be seeded 10’-0” beyond the building footprint, provided that this material contains no topsoil, peat, demolished material, trash, fine or coarse aggregate containing “slag” or components of

"slag", deleterious, carbonaceous, coal, organic and/or latent materials, nor any substance that may break or cause damage or corrosive action to occur to utility pipes, etc., that may be trenched within these areas, is of an acceptable moisture content, will compact to 90% of maximum dry density per modified Proctor Test ASTM D1557, and is approved for such use by the Contractor's testing agency and the Project Engineer. Rocks/stones shall not be over 2" in size. No rocks/stones over 3/4" in size shall be in the top 12" of subgrade. Existing soils may need to be disked or harrowed, dried, re-compacted, or otherwise improved to meet the density and moisture content requirements for re-use. Should the existing excavated materials not meet the compaction and/or moisture content requirements, the Contractor shall furnish and install fill material as hereafter specified.

1. Existing excavated soil materials shall be tested for compliance with hereafter specifications to determine approval for reuse.
2. All costs for reconditioning existing soils to meet the density and moisture content requirements for re-use approval by the Contractor's testing agency and the Project Engineer shall be at the Contractor's expense.
3. Existing excavated soil materials approved for reuse by the Contractor's testing agency and the Project Engineer shall be maintained at optimum moisture content regardless of weather conditions; said material not maintained at optimum moisture content shall not be reused and Contractor shall provide off-site material as hereinafter specified per intended location.

B. Existing excavated topsoil may be re-used. Additional material for topsoil required in excess of acceptable material from excavations on the site, shall be provided by the Contractor from a source as approved by Architect and the Owner and comply with topsoil material as hereafter specified.

1. Existing topsoil shall be screened prior to reuse and must meet requirements for new topsoil as hereafter specified.
2. No rocks/stones of any size shall be in the topsoil.

C. Excess material from excavation not suitable nor required for backfill or other purposes shall be hauled from the site as excavated.

D. The Contractor shall be responsible for complying with all laws, regulations and guidelines required to maintain an acceptable soil erosion control plan at all disturbed areas.

2.03 PIPE EMBEDMENT MATERIAL

A. If not otherwise specified on drawings or in hereafter Technical Sections, Pipe Embedment Material shall be as follows:

1. Embedment material (for PVC and/or polyethylene pipe) shall be Class II, as per ASTM D2321 and ASTM D2487 using suitable material, full draining sands and gravel conforming to AASHTO M43.
2. Embedment material (for steel and/or reinforced concrete pipe) shall be Class I or Class II, as per ASTM D2321 and ASTM D2487 using suitable material, graded crushed stone or gravel, or full draining sands and gravel conforming to AASHTO M43.
3. No fine or coarse aggregate containing "slag" or components of "slag" shall be acceptable.

2.04 EXTERIOR FILL MATERIAL

A. Material for backfilling shall be provided by the Contractor from a source as approved by Architect and the Owner.

1. All fill/backfill materials shall be tested, evaluated, and/or approved by the Contractor's testing

agency in compliance with the following.

2. Submit samples of fill/backfill materials to the Contractor's testing agency and Project Engineer for analysis, to determine the adequacy of material, and to perform moisture density relationship tests.

B. Fill and Backfill Material within non-surfaced areas 10'-0" beyond exterior building walls and/or 3'-0" beyond surfaced areas: Shall be clean earth, containing no vegetable matter, rubbish or debris or other prohibitive materials as identified in Paragraph 2.02.A. All voids shall be thoroughly filled with earth of friable material and compacted as herein provided. Rock shall not be used in fill areas where utility or drainage lines are to be located. Material must compact to 90% of maximum dry density, at moisture content within 3% of optimum, per Modified Proctor Test ASTM D1557, unless otherwise specified.

C. Fill Material within site areas to be surfaced and 3'-0" beyond (and 10'-0" beyond any structure footprint): Shall be Penndot No. 2A Limestone according to Table C of PennDot Specification 408 Section 703 (Latest Edition), quality of materials shall meet requirements of Table B, Type A. No fine or coarse aggregate containing "slag" or components of "slag" shall be acceptable. Material must originate from a PennDot approved quarry; submit verification of quarry meeting PennDot approval. Material must compact to 95% of maximum dry density, at moisture content within 2% of optimum, per Modified Proctor Test ASTM D1557.

1. Above Penndot No. 2A Limestone shall be used for backfill material for trenches, etc., through surfaced areas)

2.05 INTERIOR/ENGINEERED/STRUCTURAL/CONTROLLED FILL MATERIAL

A. Interior/Engineered/Structural/Controlled Fill Material required within any structure footprint, beneath footings, and 10'-0" beyond exterior building walls, including backfilling of walls, trenches, ditches and all areas of disturbed earth shall be tested, evaluated, and approved by Contractors Testing Agency and Project Engineer in compliance with the following:

1. Penndot 2A Limestone according to Table C of Penndot Specification Publication 408 Section 703, quality of materials shall meet requirements of Table B, Type A.
   a. Material must originate from a PennDot approved quarry; submit verification of quarry meeting PennDot approval.
   b. Material shall contain no fine or coarse aggregate containing "slag" or components of "slag" or "quarry waste", or other prohibitive materials as identified in Paragraph 2.02.A.
   c. Material shall be placed at a moisture content within 2% of optimum and compacted to 95% of maximum dry density per Modified Proctor Test ASTM D1557.
2. Submit samples of fill material to the approved testing laboratory for a sieve analysis, to determine the adequacy of material, and to perform moisture density relationship tests. Submit test results and samples to the Architect/Project Engineer.

2.06 TOPSOIL

A. Topsoil: Shall be natural clay loam soil possessing the characteristics of representative soils in the vicinity which produce heavy growth of crops, grass and other vegetation and shall be obtained from naturally well-drained areas. Topsoil shall be without admixture of sub-soil, refuse or any foreign material, free from hard dirt, brush, weeds or clods, and from clay lumps, stumps, roots, stones, or toxic substance, and any other material or substance which may be harmful to plant growth or be a hindrance to planting and maintenance operations.

1. All topsoil shall be screened (new and/or existing).

2. No rocks/stones of any size shall be in the topsoil.
3. Submit samples of topsoil to the Architect for review.

2.07 AGGREGATE/STONE BASES

A. Aggregates - General:
1. All base material must originate from a PennDot approved quarry; submit verification of quarry meeting PennDot approval.
2. No fine or coarse aggregate containing “slag” or components of “slag” shall be acceptable.

B. Gravel Base for under site concrete slabs on grade: Shall be clean washed material AASHTO (American Association of State Highway and Transportation Officials) No. 57 according to Table C of Penndot Specification Publication 408 Section 703, quality of materials shall meet requirements of Table B, Type A.

C. Gravel Base for under interior concrete slabs on grade: Shall be clean washed, angular AASHTO No. 57 Limestone, according to Table C of Penndot Specification Publication 408 Section 703, quality of materials shall meet requirements of Table B, Type A.

PART 3 EXECUTION

3.01 EXCAVATIONS

A. The Contractor shall be responsible for complying with all laws, regulations and guidelines required to maintain an acceptable soil erosion control plan at all disturbed areas.
1. Comply with Pennsylvania Department of Environmental Protection’s Erosion and Sediment Pollution Control Program Manual and the PA Code Chapter 102, Erosion and Sediment Control.

B. Make all necessary excavation on premises to bring the finished grades to the levels shown on drawings; or if not so shown, then to grade as directed by the Architect.

C. Excavations include removal of any old foundations, building construction, building materials, or tree stumps which may be concealed beneath the present grade.
1. Excavations within building addition footprints shall be coordinated with the General Contractor.
2. Extreme care shall be exercised during excavations within and around the existing structure and existing footing elevations. The Contractor shall execute work in a manner to ensure the existing building, designated to remain, against any damages resulting therefrom. The Contractor shall be responsible for repairing any damage to the existing building designated to remain, at the Contractor's expense.
3. Stabilization of existing adjacent foundations exposed during excavations shall be at the Contractor’s expense.
4. Once a subgrade has been stabilized and approved by the Contractor’s testing agency, any reworking of the approved surface recommended by the Contractor’s testing agency shall be the responsibility of the Contractor. All exposed subgrades shall be protected and/or considered sacrificial if exposed for more than one day.

D. The bottom of all excavations shall be leveled off. All loose material within the construction area, which includes those portions below any excavations, shall be removed and the excavations shall be brought into approved condition to receive subsequent materials.

E. Do not excavate to full depth when rain or freezing conditions are imminent and subsequent materials cannot be placed during the same work period. Completed excavation surfaces shall be protected from frost, freezing, and/or rain/water. Where excavation surfaces are damaged by water, mud, or otherwise disturbed, all loose mud or other materials shall be removed and the excavations filled to required elevations with specified fill material, placed in horizontal lifts not exceeding 8” and compacted; backfill and compaction shall be as specified dependent on site location, all corrective work shall be at the Contractor’s expense.

F. Excavated material shall be piled away from the edge of the excavated area, a sufficient distance to prevent overloading the bank, and graded in such a way as to prevent surface water from entering the excavated area.

G. Material from excavation not suitable nor required for other purposes shall be hauled from the site as excavated.

H. During excavation and construction, the areas shall be kept well shaped and drained at all times. Existing springs or drainage courses encountered shall be temporarily blocked off or diverted in order to carry out the work. The contractor shall be responsible for establishing acceptable erosion control measures during excavation, grading and construction operations to avoid excessive erosion.

I. Place all subsequent materials the same day excavations are made to prevent degradation of exposed subgrade soils.

J. Every effort shall be made to keep the excavations dry.

3.02 PUMPING

A. Remove all water, including rainwater or sub-surface water encountered during the course of the excavation. Removal shall be by the use of sumps and pumps, drains, and other approved methods, and shall keep the excavation free from water until the construction is completed and the backfilling is finished. The water shall be discharged to catch basins, sewers or other drainage points available, via approved storm water piping and erosion and sedimentation control methods. All dewatering costs are to be included in the Base Bid. Pumps shall be of capacity required to continually lower amount of water encountered.

3.03 BACKFILLING TRENCHES

A. Utility trenches shall be excavated to 4" below required line and grade. Refer to Paragraph 3.01.D for acceptable condition of bottom of trenches.

B. Install pipe/conduit in bedding material, as specified and/or as detailed on drawings.

C. Prior to any backfill, the Architect, Owner and local inspector (when required) shall be notified to inspect installed work 24 hours prior to required inspections.

D. After pipe is installed, inspected and approved, backfill with bedding material in lifts, not to exceed 6", to a minimum of 12" above the top of the pipe, backfill remainder of trench with material herein specified, dependent upon site location of trench, to level of finish grade or to elevations required for installation of additional work: floor slabs, finish grading, paving, sidewalks, etc. Placing and compaction of fill material

shall be performed for specific locations as specified in subsequent Paragraphs; except lifts shall not exceed 6" in thickness.

E. In no case shall underground utilities pass under foundations, unless approved by the Architect. Upon approval by the Architect, Piping running beneath footings shall be thoroughly encased in concrete for entire area disturbed.

1. All underground utilities passing through foundations shall be through galvanized pipe sleeves.

F. Furnish and install a labeled protective ribbon underground, above buried utility piping as required by code and as detailed on drawings.

3.04 EXTERIOR BACKFILLING - NON-SURFACED AREAS.

A. Clean excavation and areas to be filled of all topsoil, vegetable matter, pieces of wood, refuse and debris before placing any fill and backfill.

B. Do not fill or backfill over frozen sub-grade nor use any frozen material in fill or backfill.

C. Perform filling and backfilling carefully and brace as required, so as not to damage other work or affect the stability of any construction. No backfilling against footings or similar areas shall be performed until concrete forms have been removed and the concrete is thoroughly cured. Filling and backfilling shall be installed in maximum of 6” lifts, uniformly spread and compacted and rolled with power roller or pneumatic tamper, and then leveled or sloped as required. No puddling will be allowed. Compact each lift to a density of 90% of the maximum dry density (3% of optimum moisture content), as per modified Proctor Test ASTM D1557.

1. On site in place density tests will be performed by the Contractor’s testing agency. The Contractor shall notify the testing agency when each lift is compacted and ready for testing.

D. Hauling or moving of equipment shall not be allowed over the finished sub-grade.

3.05 EXTERIOR BACKFILLING - SURFACED AREAS

A. “Surfaced Areas” include all pads, pavements, walks, and/or curbs. Compaction, as hereinafter specified, for under paved areas shall extend a minimum of 3'-0 beyond the edge of pavement and/or curb.

B. Clean all areas to be surfaced of all topsoil, vegetable matter, refuse and debris before filling or rough grading. Do not fill over frozen sub-grade nor use any frozen material in the fill.

C. All required backfill shall be installed in maximum of 6” lifts. Each lift shall be uniformly spread and compacted and rolled with power roller or pneumatic tamper and then leveled or sloped as required to match adjacent finish elevations. No puddling will be allowed. Compact each lift to a density of 95% of the maximum dry density (2% of optimum moisture content), as per modified Proctor Test ASTM D1557.

1. On site in place density tests will be performed by the Contractor’s testing agency. The Contractor shall notify the testing agency when each lift is compacted and ready for testing.

D. Hauling or moving equipment shall not be allowed over the finished sub-grade.

3.06 INTERIOR BACKFILLING

A. The engineered/controlled fill shall be placed in horizontal lifts not exceeding 6" in thickness. Each lift shall be thoroughly compacted with vibrating rollers or other mechanical compactors as approved by the Contractor's testing agency.

B. Each 6" lift of engineered/controlled fill at moisture content within 2% of optimum shall be compacted to 95% of the maximum dry unit weight obtained by the Modified Proctor Test ASTM D1557.

1. On site in place density tests will be performed by the Contractor's testing agency. The Contractor shall notify the testing agency when each lift is compacted and ready for testing.

C. Perform filling carefully, brace as required, so as not to damage other work or affect the stability of any construction. Do filling only when walls are fully capable of withstanding the resulting pressure or after bracing has been installed.

3.07 AGGREGATE BASES

A. All aggregate bases for concrete slabs shall be compacted to 100% of maximum dry density, at moisture content within 2% of optimum, per Modified Proctor Test ASTM D1557.

1. Install a minimum depth of gravel as detailed under all concrete slabs on grade.

3.08 FINISH GRADING

A. Topsoil stripped from site and stockpiled, shall be used for topsoil requirements. If additional topsoil is required, it shall meet the requirements specified and shall be supplied by the contractor and shall be included in the contract. If there is an excess of topsoil, it shall be disposed of as directed by Architect. As specified in Paragraph 2.06, all topsoil shall be screened (new and/or existing).

B. Before placement of any topsoil, the finished sub-grade shall be scarified to a depth of 4" by discing or harrowing. All erosion gullies or depressions shall be filled with sub-grade material to produce a uniform base for topsoil. Sub-grade shall be subject to inspection by the Architect before topsoil is placed.

C. Placing and Spreading Topsoil: Place topsoil on the prepared areas and, unless otherwise indicated, spread and compact to a 4" uniform depth $\pm$ 1". Compact with a roller, one weighing not over 120 pounds per foot width of roller, or by other acceptable methods, as directed. Do not place topsoil in a wet or frozen condition.

3.09 DEFECTIVE MATERIAL AND/OR WORKMANSHIP

A. Earthwork which is not properly performed, or which fails to meet specified in place density tests, shows poor workmanship, or contains foreign substances or materials, shall be deemed to be defective and the Contractor shall remove this work from the site as directed by the Contractor's testing agency, replacing same with new materials complying with the contract specifications and meeting the approval of the testing laboratory.

B. The Contractor shall pay all costs of correcting rejected work, including all additional testing costs as well as the Architect's additional services thereby made necessary.

3.10 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.11 CLEAN-UP

A. Any paved area over which hauling operations or other moving equipment are conducted shall be kept clean and any soil or other material which may be brought upon the paved surfaces shall be removed promptly by the Contractor. Upon completion of rough grading, clear away all debris and remove from site.

END OF SECTION 312000.5

SECTION 329200.5 - LAWN REPAIR

PART 1 GENERAL

1.01 SCOPE

A. This section of specifications includes all labor, supervision, equipment, tools, materials and all other means of construction necessary to perform the grass (lawn seeding) work as shown on drawings, described in this specification, or as is necessary to complete the work in a first-class manner.

B. All lawn areas disturbed by construction activities shall be repaired as described herein.

C. Contractors shall coordinate with the General Contractor to verify that the herein specified products are the products actually installed under the General Contractor's scope of work in an effort to provide the Owner with a uniform lawn appearance.

1.02 RELATED WORK INCLUDED IN OTHER SECTIONS

A. Documents affecting work of this Section include but are not necessarily limited to: All Sections in Divisions 00, 01, and 02 of these Specifications.

B. Earth Moving - Section 312000.5.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

B. Test Reports: Submit certified laboratory test reports as necessary to show compliance with specified requirements.

C. Submit seed vendor's certified statement for each grass seed mixture required, stating botanical and common name, percentage by weight and percentages of purity, germination, and weed seed for each grass seed species.

1.04 PROTECTION

A. Materials: All materials shall be protected from the weather and shall not be stored in direct contact with the ground.

1.05 PERMANENT PLANTING SEASON

A. Planting periods shall be restricted in the Spring between March 15 and June 1, and in the Fall between August 1 and October 15, except if special instructions to the contrary are issued by the Architect.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fertilizer: Commercial fertilizer conforming to requirements of Pennsylvania Soil Conditioner and Plant Growth Substance Law, Act of December 1, 1977, P.L. 258, No. 86 (3P.S.68.2), as amended.

1. Dry formulation of Ten (10) percent nitrogen, twenty (20) percent available phosphoric acid and twenty (20) percent potash for seeded areas.

B. Lime (pulverized agricultural limestone): Shall have a calcium carbonate equivalent of 89 percent; 95 percent shall pass a No. 20 sieve, 60 percent shall pass a No. 60 sieve, and 50 percent shall pass a No. 100 sieve; conforming to requirements of Agricultural Liming Materials Act of 1978, P.L. 15, No. 9, as amended.

C. Grass seed shall be fresh, clean, new crop seed. Seed may be mixed by approved method on the site or may be mixed by the dealer. If the seed is mixed on the site each variety shall be delivered in the original containers, which shall bear the dealer's guaranteed analysis. If the seed is mixed by the dealer, the contractor shall furnish the Architect the dealer's guaranteed statement of the composition of the mixture and the percentages of purity and germination of each variety at a given date which shall not be more than 90 days prior to date of use.

1. Permanent Seed Mix: PennDot Type 'B'
   Kentucky Bluegrass 53 pounds/acre
   Creeping Red Fescue 29 pounds/acre
   Perennial Ryegrass 20 pounds/acre
2. All mixes shall be 98% Pure Live Seed required, no noxious weeds permitted. Test shall be no older than 30 days.
3. Provide seed complying with tolerance for purity and germination established by Official Seed Analysts of North America.

D. Mulch shall be wheat or oats straw. It shall be free from mature seed bearing stalks or roots of prohibited or noxious weeds as defined in the Pennsylvania Seed Act of 1947.

E. Erosion Control Blankets (aka ECB's, ECM's, Soil Erosion Matting; Rolled Erosion Control Products – RECP's): Shall be SC150BN Double Net Straw Blanket as manufactured by North American Green, or equivalent.

F. Hydroseed Mixture: At the Contractor's option, seed, fertilizer, hydro-mulch, tackifier, and water may be combined into a greenish mixture for a one step application.

1. Seed: As specified above.
2. Fertilizer: As specified above, preferably in a granular state.
3. Lime: If soil PH tests require the application of lime, provide liquid lime product such as New Cal.
4. Tackifier: Used to aid in holding hydroseed mixture in place on hillsides.
5. Mulch: Cellulose fiber mulch made from recycled newsprint is preferred product. Also acceptable are wood fiber mulch or combination of paper and wood fiber mulch.

G. Water: The Contractor shall make whatever arrangements may be necessary to insure adequate supply of potable water to meet the needs of this contract.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until satisfactory conditions are corrected.

3.02 PRECAUTIONS

A. Sidewalks, roads and other paving adjacent to the seed operation shall be kept clean and free of obstructions, mud and debris at all times.

B. Flushing of streets and disposal of dirt or debris into sewers shall not be permitted.

C. Dust shall be controlled by approved means to the satisfaction of the Architect.

3.03 METHODS

A. The top surface of all areas to be seeded shall be thoroughly loosened to a depth of at least 4" by discing or harrowing. All topsoil shall then be screened to remove all roots, coarse materials and stone, in the entire 4" thickness of topsoil. Any ruts or damaged areas resulting from erosion, hauling or other cause shall be repaired by filling with topsoil. Dress areas to even surface conforming to established grades.

B. Lime shall be spread evenly over the surface of all areas to be seeded at the rate necessary to obtain a pH value between 6 and 7, generally at a rate of 4.0 - 6.0 ton/acre. Contractor shall perform soil testing to determine rate.

C. Fertilizer shall be distributed uniformly over all areas to be seeded under this contract at the rate 900 – 1000 pounds/acre.

D. Fertilizer and lime shall be incorporated into the soil to a depth of at least 4" by discing, harrowing or other acceptable method.

E. After all topsoil has been limed and fertilized, topsoil shall be smoothed with a drag or smoothing harrow to prepare the surface to receive seeding.

F. Seed shall be applied with a Brillion seeder calibrated to apply at rates as follows:
   1. Permanent Seeding - 102+ pounds/acre.
   2. Areas inaccessible by machine seeders shall be hand seeded at corresponding rates.
   3. Note: Seed rate is listed as lbs/acre of Pure Live Seed (PLS). Actual seeding rate shall be determined by dividing PLS rate by the %PLS shown on each seed tag of each seed species.

G. Seeded areas shall have half the seed sown at right angles to the direction of the first sowing. Areas seeded shall have the seed raked into a depth of 1/16 of an inch and then the areas shall be lightly rolled, and watered with a fine spray.

H. Proceed with mulching as specified below.

I. At the Contractor's option, seeding may be applied by a hydroseeding system in lieu of methods specified above. Hydroseeding shall be performed by Turbo Turf Hydro Seeding equipment or similar device combining application of seed, fertilizer, hydro-mulch, tackifier, and water in one step. Application of specified straw mulch is eliminated with this process. Application rate of seed and fertilizer shall be as specified above. Application rate of tackifier, hydro-mulch, and water shall be as recommended by spraying system equipment manufacturer.

3.04 MULCHING

A. Mulch shall be applied at the rate of 3 ton/acre (or 1200 lbs/1000 SY) a maximum of 48 hours after seeding and anchored immediately, unless otherwise schedule on drawings. Tractor drawn implement to "crimp" mulch into soil is not permitted on slopes greater than or equal to 3 to 1. Machines that cut mulch into short pieces will not be permitted.

B. Install Erosion Control Blankets over all slopes greater than or equal to 3 to 1 and wherever ponded water may occur, such as swales, channels, lowest area of retention ponds, etc. Blankets shall be installed according to manufacturer's installations and recommendations.

C. Keep seeded and mulched areas undisturbed until a satisfactory stand of grass has been established.

3.05 PROTECTION

A. The contractor shall surround all newly seeded areas with neat temporary stakes connected by cord or wire on which signs shall be hung warning people to "keep off new seeding". These temporary barriers and signs shall be maintained in good order by the contractor until his work has been finally accepted and shall then be removed unless otherwise directed by the Architect.

3.06 WATERING

A. Lawn areas shall be kept wet to a depth of 3" for ten (10) days immediately following the seeding and thereafter as may be necessary during the maintenance period.

3.07 ACCEPTANCE OF SEEDING WORK

A. The Architect and Owner will accept the seeding work when a satisfactory stand of grass has been produced over the area of work. A satisfactory stand of grass shall be a close weed free stand of grasses specified of good color and vigor.

B. It is understood that acceptance of lawn areas as mentioned herein will not relieve the Contractor of responsibility for correction of defects in this phase of the work which may become evident during the effective period of the One-Year Maintenance Bond.

3.08 RESEEDING

A. All areas of lawn which do not show a prompt catch shall be reseeded and this operation shall continue during the one year period of the maintenance bond. Reseeding shall include the repair of washouts, settlements and replacement of topsoil before reseeding.

END OF SECTION 329200.5