

STEAM BOILER REPLACEMENT
ENERSYS

AEM ARCHITECTS
PHONE (610) 779-3220

CONSOLIDATED ENGINEERS
PHONE (610) 916-1600

This Addendum forms a part of the Contract Documents for the above referenced project; and hereby modifies and takes precedence over the original bidding documents as though originally included therein at length. Bidding contractors shall acknowledge receipt of this Addendum in the space provided on the Bid Form. **This Addendum consists of 1 page plus attachments.**

CHANGES TO BIDDING REQUIREMENTS

1.1 Minutes of the Pre-Bid Meeting held on July 23, 2020 are issued herewith and shall become part of this Addendum.

CHANGES TO DRAWINGS

1.2 The following attached Sketch dated 07/29/20 is hereby issued with this Addendum:

	<u>Reference</u>	<u>Description</u>
SKA-1	A-4	Typical Wall Conflict Detail

1.3 Drawing H-1 – HVAC Level 2 – Area "C" Demolition

A. Revise keyed drawing note 10 to read, "... and accessories. G.C. to patch existing wall penetration."

1.4 Drawing H-6 – HVAC Level 3 – Area "A"

A. Section A, add duct detector in the 18x18 supply air duct.

B. Section A, add section note 1 to read, "1. Duct Detector furnished and wired by Electrical Contractor. H.C. to install duct detector. Coordinate final location with Electrical Contractor."

1.5 Drawing H-8 – HVAC Level 3 – Area "C"

A. Section B & C, add section note 1 to read, "1. Refer to detail 8/A-4 for structural detail of the high corridor pipe support. H.C. to provide pipe supports".

1.6 Drawing H-9 – HVAC Schematic and Boiler Room Layout

A. Revise keyed drawing note 10 to read, "... locations with General Contractor. Refer to Interior trench detail on sheet A-4 for backfill requirements."

B. Boiler Room Partial Plan, revise HWS/R pipe size to 6" after the 4" take-off to the existing mechanical room.

END OF EMAIL ADDENDUM NUMBER ONE

PRE-BID MEETING MINUTES

PROJECT: EnerSys Technology Center Steam Boiler Replacement

MEETING DATE: Thursday July 23 2020

ATTENDANCE: Chris Richards, EnerSys
Sean Nigrelli, EnerSys
John Kowalski, AEM
Michael Savage, AEM
Adam Moser, CE
Tim Roaten, Eastern Air
Luke McNaughton, Balton

Mitch Dorn, EnerSys
Rick Messner, Burkhardt
Clay Leibold, Leibold
David Resh, CE
Paul Plummer, Solutions
Steve Warnek, Balton

ITEMS DISCUSSED:

1. Mr. Kowalski introduced the Owner's representatives and various Consultant representatives for the project.
2. Bids are due on August 13, 2020 at 2 PM. Bids are to be delivered to the EnerSys Main Lobby, 2366 Bernville Road, not the project site. All bidders are advised to deliver their bids in a timely manner.
3. A response shall be provided for each alternate bid listed. Alternate bids are inclusive of all costs of coordination, modifications and adjustments that are required to incorporate the work of the Alternate Bid into the project.
4. All Labor and Material Allowances on the Bid Form and indicated on Drawings and in Specifications are in addition to work indicated in the Construction Documents. **The value of the allowances is to be included in the Base Bid and any unused allowance, or portion thereof, will be credited to the Owner at the close of the Project.**
5. All addenda for the project will be issued electronically via email. Bidders registered with AEM Architects must ensure that the appropriate email address is provided to receive addenda. Bidders shall confirm receipt of all addenda with AEM Architects.
6. The Project shall be bid as indicated in the Bidding Documents and subsequent addenda.
7. The Owner will be applying for and purchasing only the building, mechanical and electrical permits issued by Bern Township. Each Contractor is responsible to provide any additional information required by the municipality prior to or precedent to issuance of the permit(s). All contractors are responsible to purchase and obtain any other permits, contractor licenses, certifications, etc., relating to their portion of the work.
8. All questions regarding the project shall be submitted in writing via email and a written response will be provided in a timely manner. Questions pertaining to the work of one of AEM's or the Owner's consultants should be directed to the appropriate Consultant in writing with a copy to AEM:

AEM Architects: 3700 Perkiomen Avenue, Reading, PA 19606.
John Kowalski (jdkowalski@aem-arch.com)
Mike Savage (mfsavage@aem-arch.com)

Consolidated Engineers: 1022 James Drive, Leesport, PA 19533
Adam Moser (adammm@cemec.com)
David Resh (davidr@cemec.com)

Eastern Air Balance: 252 South Esbenshade Road, Manheim, Pennsylvania 17545
Tim Roaten (troaten@easternairbalance.com)

9. The site and building will be open to bidders immediately following the Pre-Bid Meeting.
10. Access to the building and grounds shall be coordinated through Mr. Richards. Access will be available during normal business hours (access outside these hours is also possible when it can be accommodated by the Owner). Mr. Richards shall be given adequate notice (minimum 24 hours) to provide accommodations for contractor access to the building or site. Contractors seeking access to the building/site without prior approval will be denied access.

11. Contractors are required to review all Bidding Documents to determine their complete scope of Work. Any issues requiring clarification shall be brought to the attention of the Architect immediately. Bidders are reminded that they are responsible for complete review of all Bidding Documents to determine their complete scope of responsibility.
12. CAD files are available only from AEM Architects to the successful low bidder. No CAD files will be made available during bidding.
13. The anticipated schedule for the Project is outlined below. Every Bidder, by submitting a Bid, indicates that they understand and commit to these schedule requirements and that their bid includes all costs necessary, including premium time, to meet this schedule.

Receive Bids: August 13, 2020

Owner reviews Bids and authorizes the project: September 3, 2020

Work commences on Project Site: September 10, 2020

Substantial Completion Date: January 8, 2021

Final Completion: January 22, 2021

14. The Owner will allow the use of toilet facilities on site, but expects the space to be kept clean. If the space is abused, the HVAC Contractor will be responsible to provide portable facilities.
15. Selective demolition relative to the building and site elements is the responsibility of the Contractor indicated to perform the same. The disconnection of electrical and HVAC components shall be by that specific trade as required to accommodate the work of any other Contractors involved with demolition affecting HVAC or electrical components. All Contractors shall review the entire set of bidding documents to determine the scope of their responsibility with respect to demolition.
16. Project will be constructed under coordinated, concurrent multiple prime contracts.

The Prime Contractors' bid includes all materials, labor, management, transportation, tools, equipment, and services for the Project as required for a complete and satisfactory job. Each Contractor shall coordinate its work with the other Contractors for the work to be performed in proper construction sequences, in accordance with the Project schedule, to achieve project milestones and Substantial Completion dates. The HVAC Contractor shall be the lead contractor and coordinate the work on site with all other trades.

- General Contractor (Balton)
- HVAC Contractor
- Electrical Contractor (Solutions Electric)
- Sprinkler Contractor (S&L)
- Controls Contractor (Trane)

Contractor's supervision and coordination shall include advance review of existing conditions at least five days prior to renovation work commencing during second shift hours. Failure to review existing conditions thoroughly prior to starting any work will not be a cause for an extension of time request. The HVAC Contractor shall be the lead contractor and coordinate the work on site with all other trades.

Cooperate fully with separate Contractors so work on those Contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other Contracts. Coordinate the Work of this Contract with work performed under separate Contracts.

Owner will award separate Contract(s) for the construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract. The extent of each Prime Contract is indicated in the Contract Documents. Except where no other more specific description is contained in the Contract Documents, general names and terminology on the Drawings and in Specification Sections determine which Prime Contract includes a specific element of work.

Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which Contract includes a specific element of Project.

- 1) Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.

- 2) Demolition: Reference Division 02 Sections. HVAC and Electrical Contractors shall disconnect and remove all existing equipment and work associated with their respective trades as indicated or as required in the areas to be demolished whether specifically referenced or not.
- 3) Trenches and other excavation for the work of each contract shall be the work of the HVAC Contractor, unless noted otherwise. The General Contractor shall cut and remove concrete slabs and install new slabs.
- 4) Blocking, backing panels, sleeves, and metal fabrication supports for the work of each Contract shall be the work of each Contract for its own work unless noted otherwise.
- 5) Equipment pads shall be by the General Contractor with layout by the HVAC Contractor.
- 6) Roof-mounted equipment curbs for the work of each Contract shall be furnished by each Contract for its own work and shall be installed by the General Contractor.
- 7) Painting for the work of each Contract shall be the work of the General Construction Contract unless noted otherwise.
- 8) Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials.
- 9) Cutting and Patching: Provided under each Contract for its own work unless noted otherwise.
- 10) Through-penetration firestopping for the work of each Contract shall be provided by each Contract for its own work unless noted otherwise.
- 11) Sealing Penetrations: Penetrations shall be sealed by the Contractor whose work requires the penetration.
- ~~12) Supplemental Structural Steel Framing: Supplemental steel framing shall be provided by the General Contractor for wall, floor and roof openings as indicated on the Drawings. Layout for supplemental steel framing for HVAC and Electrical work shall be provided by Contractor whose work requires framing. **No supplemental steel is required.**~~
- 13) Reinforcement of Structural Framing for HVAC, Plumbing and Electrical Work: Furnished and installed by the Contractor whose work is loading new or existing framing. Contractor requiring the same shall verify that reinforcement has been provided accordingly and report deficiencies to Architect.
17. EPDM roofing subcontractor must certify in writing that they are a Contractor in good standing from the roofing manufacturer and they shall provide documentation identifying the rating from the manufacturer they intend to supply the roof system material. Ratings are as follows:

Firestone: QIR rating of 2.0 or less.
Carlisle: Carlisle Inspection rating of 9.5 or better.
GAF: Rating of 9.5 or better
18. Excavation and backfill work is the responsibility of the HVAC Contractor except as indicated otherwise. All handwork (laying pipe, conduit, etc. and hand excavation for pipe hubs and the like) in excavations is the responsibility of the trade requiring the same.
19. Trane will provide all required controls for the project as a separate contract. HVAC contractor is required to verify scope of work with them directly. The following is a partial list of basic scope.
AHU-12; Entire unit with factory controls furnished by Trane and installed by HC.
 - a. Control Valves; furnished by Trane and installed by HC.
 - b. Pipe mounted control sensors; furnished by Trane and installed by HC.
 - c. Room Temperature Sensors: Furnished, installed, and wired by Trane.

20. Eastern Air Balance Corporation is the Commissioning Consultant for the project. They will be providing testing, adjusting and balancing services for the HVAC air and hydronic systems and will perform HVAC Systems Commissioning. The HVAC Contractor does not need to carry the cost of testing and air balancing in their bid for this project.
21. All Bidding HVAC and Electrical Prime Contractors and the ATC subcontractor shall understand the Commissioning Consultant's responsibilities for this project and shall execute their work in a manner that allows the Commissioning Consultant time to complete their work by the scheduled date of substantial completion. **(Sample prefunctional checklists and the Commissioning Specification are attached to these minutes.)**
22. **The Owner's COVID-19 requirements are for everyone to be masked while working on site and that anyone who has an employee that is showing symptoms notify them immediately.**
23. **The epoxy floor finish shall be patched with a similar material in a color that matches as closely as possible the existing epoxy floor finish where new concrete is installed.**
24. **The G.C. shall provide a dumpster for general trash removal, the H.C. shall provide a metals only dumpster for their demolition.**
25. **Ceiling removal and reinstallation shall be performed by the H.C. except for the gyp board access areas included in the G.C.'s allowance.**
26. **Sketch SKA-1 is attached for use where a CMU wall and joist interfere.**
27. **The H.C. shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:**

Type	Penal Sum (\$0.00)
Payment Bond	100% of the Contract Sum
Performance Bond	100% of the Contract Sum

The Payment Bond and Performance Bond shall be the form provided by the Owner (see forms attached). The Contractor shall deliver the required bonds to the Owner not later than seven (7) days after being awarded the Project. The Contractor shall require the attorney-in-fact who executes the bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

END OF PRE-BID MEETING MINUTES

SECTION 01 91 13 – BUILDING SYSTEMS COMMISSIONING REQUIREMENTS

PART 1 – GENERAL

- 1.1 All HVAC Systems Commissioning Services for this project shall be contracted directly by Enersys under a separate professional services contract.
- 1.2 The purpose of this specification section is to provide for a completed HVAC System which has been fully commissioned without omissions or overlaps between the installing prime contractors and the NEBB Certified Commissioning Agency. Installing prime contractors are those who perform the installation and start-up of the HVAC Equipment and Systems in preparation for the work to be performed by the Commissioning Agency which is described herein.
- 1.3 Description of Work to be Performed
 - A. HVAC Building Systems Commissioning is the responsibility of the NEBB Certified Building Systems Commissioning Administrator. The multiple prime contractors for this project including the Mechanical Contractor (MC), Electrical Contractor (EC) and Building Automation System Contractor (BAS) are responsible to provide all required support for equipment and systems start-up and testing as detailed herein and are to complete all portions of their work in a satisfactory manner and make all systems fully operational for the work to be performed by the NEBB Certified Building Systems Commissioning Administrator.
- 1.4 The NEBB Certified Building Systems Commissioning Administrator will verify and document the following.
 - A. Field Installation Verification (FIV) – This includes verification that all components, equipment and systems have been installed in accordance with the project documents (plans and specifications).
 - B. Operational Performance Tests (OPT) – Operational Performance Tests will be conducted to verify and document proper start-up of all components, equipment and systems.
 - C. Functional Performance Tests (FPT) – Functional Performance Tests will be performed to verify and document the interoperability of all components, equipment and systems.
- 1.5 Definitions
 - A. Acceptance Phase Commissioning: Commissioning Tasks which are performed after the construction has been completed and all Site Observations and Pre-Functional Checklists have been completed and accepted. Commissioning activities that are performed during this phase include Functional Performance Tests (FPT) and owner training.
 - B. Accuracy: The capability of an instrument to indicate the true value of a measured quantity.
 - C. Basis of Design (BOD): The design professional's Basis of Design includes both Design Criteria and a Design Narrative. These two documents will record all concepts and calculations, decisions and product selections that have been utilized to meet the Owner's Project Requirements (OPR) and also meet any applicable codes or standards.
 - D. Calibrate: The act of comparing an instrument of unknown accuracy with a standard of known accuracy to detect, correlate, report or eliminate by adjustment any variation in the accuracy of the tested instrument.
 - E. Commissioning Authority (CA): The NEBB Certified Building Systems Commissioning Professional who administers the Commissioning Plan by managing the members of the Commissioning Team.

- F. Commissioning Plan: A document prepared by the CA that details the scope of work and defines responsibilities and the documentation requirements of the Commissioning Process.
- G. Commissioning Process: A quality focused process for enhancing the delivery of the project. The process includes verifying and documenting that the building and all of its components, equipment and systems have been planned, designed, installed, tested and can be operated in accordance with the Owner's Project Requirements.
- H. Commissioning Report: The final document that presents the results of the commissioning process for the project. The report will include a summary, copy of the fully executed commissioning plan, commissioning issues log, project correspondence and copies of all completed Pre-Functional Checklists.
- I. Commissioning Team: Individual team members who work in a coordinated effort and are responsible for implementing the commissioning process.
- J. Construction Phase Commissioning (CPC): All commissioning activities completed during the construction process, after the successful completion of the design phase and prior to the start of the Acceptance Phase Commissioning.
- K. Deferred System Test: Includes any test that cannot be performed during the Acceptance Phase due to ambient conditions or any other condition which prevents the testing from being completed during the normal acceptance testing period.
- L. Deficiency: A condition that adversely affects the operability, maintainability or functionality of any component, equipment or system or that does not conform to the project documents or industry accepted practice.
- M. Design Criteria: A complete list of the design requirements for the project, including its source. This information is used during design to ensure that all design elements meet the Owners Project Requirements.
- N. Design Intent: A document that includes a detailed explanation of all concepts, ideas and design criteria that are deemed by the owner to be important. This design intent document is used to provide a written document of these concepts, ideas and design criteria.
- O. Design Narrative: This is a written document prepared by the Engineer that includes a written description of the proposed design for the project that meet all of the requirements of the Owner's Project Requirement statement. This document should include a detailed description of the systems that were selected for the project and why they were chosen. The document should also include information on why other systems were considered and rejected. Acceptance of the information included in the Design Narrative should be by both the Owner and Engineer.
- P. Design Phase Commissioning (DPC): All commissioning activities performed during the design phase of the project.
- Q. Functionality: A design component or construction process which allows a component or system to be installed or operated in a way which will produce the required outcome of the Owner's Project Requirements.
- R. Functional Performance Test (FPT): Functional Performance Tests are performed to prove the functionality of a component or system. Functional Performance Testing is conducted after all Pre-Functional Tests have been performed and accepted.
- S. Installation Verification: Observations and inspections that are performed to verify that a component, equipment or system has been installed in accordance with the contract documents and industry standards.

- T. Issues Log: A formal record of deficiencies and their resolution that have been discovered by the Commissioning Team during the process of implementing the Commissioning Plan.
- U. NEBB Certified BSC Firm: A firm that has met and maintains all of the requirements of the National Environmental Balancing Bureau for firm certification in Building Systems Commissioning and is currently certified by NEBB. A NEBB Certified BSC Firm must employ at least one NEBB Certified BSC Professional in a full-time management position.
- V. NEBB Certified BSC Professional: A full time employee of the NEBB Certified BSC Firm in a management position who has successfully passed the Certified Professional level examinations and maintains the Certified Professional re-qualification requirements of NEBB.
- W. Owner's Project Requirements (OPR): A written document that details project requirements including the expectations for how the building and its systems will be operated. This should include any specific project goals, system performance criteria, cost considerations and any supporting data.
- X. Precision: Precision is the ability of an instrument to produce repeatable readings of the same quantity under the same conditions. The precision of an instrument refers to its ability to produce a tightly grouped set of values around the mean value of the measured quantity.
- Y. Pre-Functional Test (PFT): Inspection and testing that is performed by the installing contractors before functional testing. This includes installation verification and component and system start-up testing.
- Z. Site Observation Reports (SO): Written reports of onsite inspections and observations by the CA. These reports are used to document installation issues which will require correction or further analysis by the Engineer.
- AA. Static Tests: Tests that are conducted to verify a specified static condition, such as hydrostatic testing of piping systems or leakage testing of duct systems.
- BB. Start-Up Tests: These tests are conducted to verify that components and systems are ready for automatic operation in accordance with the manufacturer's requirements.
- CC. Systems Manual: A comprehensive document that includes all information required for the owner's staff to properly operate the systems.
- DD. Test Procedure: A detailed written procedure that defines methods and expectations for tests conducted on components, equipment and systems.
- EE. Verification: A process by which documents, components, equipment or systems are confirmed to be in compliance with the Owner's Project Requirements.
- FF. Warranty Phase Commissioning: Any commissioning activity that is performed after the project has been completed and accepted by the owner. Warranty Phase Commissioning includes follow-up verification on system performance, assistance to the owner in identifying warranty related issues and enforcement of warranty provisions included in the construction contract.

1.6 Design Phase Commissioning

A. Design Phase Basis of Design

1. The design professionals are responsible to prepare the Basis of Design for the project. The Basis of Design has two components, the Design Narrative and the Design Criteria.

B. Design Narrative

1. The Design Narrative is a document prepared by the design professionals that identifies any assumptions made in the interpretation of the Owner's Project Requirements and the proposed design solutions that satisfy the requirements of the Owner's Project Requirements. This document should include a description of the components, equipment and systems that have been selected for the project and why they were selected. The document should also include reasons other components, equipment and systems were considered and rejected. Acceptance of all items in the Design Narrative should be a consensus of both the Owner and the design professional which will be documented by the Commissioning Authority. The accepted Design Narrative will serve as a scope of work for the Design Team in creating the contract documents.

1.7 Design Criteria

- A. The Design Criteria is a detailed list of the design parameters for the project, including the source and how it meets the Owner's Project Requirements. The Design Criteria may include the following information:
 1. The project location, and special site requirements and environmental considerations
 2. Design parameters and conditions
 3. Design assumptions and limitations
 4. Accepted safety factors that are to be included in the design
 5. Expected levels of redundancy
 6. Code requirements, any standards applicable to the design and any governmental regulations.
- B. This Design Criteria should be used in all engineering calculations that are used to produce the Contract Documents. The Commissioning Authority will review and evaluate the component, equipment and systems design for conformance to the Owner's Project Requirements and verify that they can be successfully tested and commissioned, will function and can be maintained.
 1. Systems Review – The Commissioning Authority will review each system for operability, functionality and maintainability and compliance to industry quality standards.
 2. Component Review – The Commissioning Authority will review each component for operability, functionality and maintainability and compliance to industry quality standards.
 3. The Commissioning Authority will verify that the proposed components, equipment and systems can be tested in a manner that will provide valid test results.
 4. The Commissioning Authority will issue a Design Phase Commissioning Report. This report shall contain a commissioning issues log that documents all Design Phase issues.

1.8 Design Phase Activities

- A. Commissioning Activities Scheduled – The Commissioning Authority shall verify that all required commissioning activities are incorporated into the Design Phase schedule.
- B. Commissioning Requirements Identified in the Contract Documents – The Commissioning Authority shall assist the design professionals in the preparation of the commissioning specifications for the project to be included in the contract documents. The Commissioning Authority shall review the contract documents to verify that contractual obligations related to Construction Phase and Acceptance Phase commissioning activities have been clearly defined in all applicable specification sections. The Commissioning Authority shall verify that the scope of work for commissioning activities for all contractors, vendors and subcontractors is clearly defined so that contractors and vendors can quantify all commissioning activities and the associated costs. The Commissioning Authority shall verify that the contract documents clearly define the testing methods to be utilized and what criteria will be used to determine acceptance.

- C. The Commissioning Authority will coordinate with the Design Team and the Owner to define specific training requirements for the Owner's staff and will verify that the training requirements are incorporated into the final Contract Documents.
- D. At predetermined intervals during the design phase the Commissioning Authority will review and evaluate the Construction Documents. The review of the drawings and specifications is performed for each component, equipment and system for constructability, maintainability, functionality and its ability to be effectively balanced and commissioned.
- E. The Commissioning Authority will create all Pre-Functional Checklists which are to be utilized for the project and included in the Contract Documents. The Pre-Functional Checklists will be completed by the installing prime contractors, Mechanical Contractor (MC), Electrical Contractor (EC) and Building Automation System Contractor (BAS) to verify installation and start-up of all components, equipment and systems.
- F. The Commissioning Authority will attend and participate in the Pre-Bid meeting to fully explain the commissioning requirements for all trades as contained in the Contract Documents.

2.1 Construction Phase Commissioning

- A. During the Construction Phase all components, equipment and systems are installed and started. During Construction Phase the Commissioning Authority will coordinate and conduct a kick-off commissioning meeting. This meeting will be conducted to provide detailed information on the completion and submission of the component, equipment and systems Pre-Functional Checklists and to develop a coordinated systematic plan for the start-up and turnover of the equipment and systems for the start of Acceptance Phase Commissioning activities. Sample Pre-Functional Checklists have been included at the end of this specification section. Members of the Commissioning Team who will actively participate in the Construction Phase Commissioning Activities include the Owner or their designated representative, Project Engineer, Construction Manager, Mechanical Contractor, Electrical Contractor, Building Automation System Contractor, NEBB Certified TAB Firm and the Commissioning Authority (NEBB Certified Building Systems Commissioning Professional). All members of the Construction Phase Commissioning Team should carefully examine this specification section and all other cross-referenced specification sections for their individual roles and responsibilities related to commissioning activities.

2.2 Construction Phase Commissioning Activities

- A. The Commissioning Authority is responsible to verify that all Construction Phase and Acceptance Phase Commissioning Activities are fully incorporated into the overall construction schedule.
- B. Submittal and Shop Drawing Review and Approval – The Mechanical Contractor (MC) and Building Automation System (BAS) Contractor shall each forward one copy of all related component, equipment and systems submittal data including drawings and sequence of operations to the Commissioning Authority for their review simultaneous to the submission of these documents to the Design Professionals. The Commissioning Authority shall be responsible to review all applicable submittal data and shop drawings to verify that data contained in the documents meets the Owner's Project Requirements and is in compliance with any applicable specification section. The Commissioning Authority shall issue a written review report for each submittal and shop drawing, noting any deficiencies or recommendations as a result of the review. The Design Professionals will retain the right of Final Approval for all submittals and shop drawings.
- C. The Commissioning Authority is responsible in their scope of services for this project to review all HVAC Submittals and shop drawings including all Building Automation Systems and Sequence of Operations. This includes review and comment on the initial submittal and an allowance for one (1) additional review of any submittal that is return by the Design Professionals "Revise and Resubmit".

- D. The Mechanical Contractor and Building Automation System Contractor are each responsible to provide the Commissioning Authority with a final Clean Set of submittals which clearly indicate that any comments made by the Design Professionals have been incorporated into the Final Submittal Data. If a submittal is return "Approved as Noted" the final Clean Set of submittal data **MUST** indicate how the noted items have been modified to be in compliance with the applicable specification section.
- E. Upon receipt of Final Set of approved HVAC related submittals and shop drawings and all Building Automation Systems drawings and sequence of operations the Mechanical Contractor (MC) shall submit one (1) electronic copy of the approved submittals and shop drawings including all applicable installation, operation and maintenance manuals and any applicable warranty certificates to the Commissioning Authority. The Operations and Maintenance Manuals for all HVAC related components, equipment and systems for this project will be prepared by the Commissioning Authority and submitted to the Design Professionals for review and approval prior to final submission to the Owner.

2.3 Site Installation Inspections

- A. The Commissioning Authority shall make routine inspections during the Construction Phase of the project. A minimum of two inspections per month will be scheduled, or more frequently as required by the progress of the work. Inspections will be conducted to verify that the installation of the components, equipment and systems is in compliance with the Contract Documents and to identify and document any quality issues that may lead to functional performance issues. After the completion of each inspection, the Commissioning Authority will provide a written inspection report. Any deficiencies that are noted will be forwarded to the appropriate member of the Commissioning Team for review and the appropriate corrective action. Any noted deficiencies will also become part of the Commissioning Issues Log until it has been resolved, reviewed and accepted.

2.4 Pre-Functional Checklists

- A. As previously noted in Section 2.1 the Commissioning Authority will develop and distribute copies of the Pre-Functional Checklists for all HVAC System components, equipment and systems to the members of the Commissioning Team. The Pre-Functional Checklists shall be used by the installing Mechanical Contractor (MC), Electrical Contractor (EC) and Building Automation System Contractor (BAS) to verify and document installation and start-up of components, equipment and systems. All work required to be performed by the individual installing contractors as listed in the Pre-Functional Checklists shall not be considered to be complete until documentation of the work performed has been submitted to and approved by the Commissioning Authority. No Testing, Adjusting and Balancing work or Acceptance Phase Commissioning work will begin on any equipment or system until the Pre-Functional Checklists have been fully completed reviewed and accepted by the Commissioning Authority.

2.5 Work to be performed prior to Commissioning

- A. Work performed during this phase of the commissioning process shall include but not be limited to the following:
 - 1. Complete the installation of all components, equipment and systems including all piping, duct, insulation, wiring and controls per the contract documents including any sub-systems to ensure that they are complete systems and fully functional.
 - 2. Set-up and calibration of all Building Automation Systems control devices including adjustments to control valves and damper actuators.
 - 3. Set-up and programming of Building Automation Systems for accurate response to meet the specified sequence of operations.
 - 4. Make any final adjustments to vibration isolators and seismic restraints (if applicable).
 - 5. Verify the operation of any Life Safety devices including manual and automatic Fire / Smoke Dampers.
 - 6. Provide start-up of all equipment and systems. Provide factory start-up of equipment and systems as specified. This includes motor rotational checks, any applicable cleaning, filling or purging of systems and verification of the operation of the control sequences.

2.6 Commissioning Issues Log and Deficiency Resolution

- A. The Commissioning Authority will report on any deficiencies discovered from the Pre-Functional Checklists. A Commissioning Issues Log will be maintained and distributed to the appropriate Commissioning Team Members for resolution. The Commissioning Authority will work with the other members of the Commissioning Team to ensure that any reported deficiencies are completely understood as well as any responses or corrective actions that are required for resolution of the stated deficiency. It will be the Owner's responsibility to manage the Commissioning Issues Log for resolution of any outstanding issues or noted deficiencies. The Commissioning Authority will assist the Owner as required to verify completion of any items noted in the Commissioning Issues Log. After corrective actions have been taken, any test necessary to verify conformance with the Contract Documents will be conducted by the Commissioning Authority.
- B. Deficiencies or incomplete work identified by the Commissioning Authority shall be corrected by the responsible installing contractor and verification performed by the Commissioning Authority for compliance with the Contract Documents prior to the start of Acceptance Phase Commissioning.**

2.7 Acceptance Phase Commissioning

- A. During Acceptance Phase Commissioning, the building systems have been completed and made fully functional. The Commissioning Authority is responsible to perform Functional Performance Tests to verify and document that all components, equipment, systems and sub-systems operate under all specific sequence of operations. During this time the Commissioning Authority will also be responsible to coordinate any specific or required Owner training.

2.8 Acceptance Phase Commissioning Activities

- A. Functional Performance Testing – The Commissioning Authority shall operate all HVAC components, equipment, systems and controls through their entire sequence of operations as outlined in the Commissioning Plan. All testing performed during Acceptance Phase Commissioning shall be performed directly by the Commissioning Authority and shall include the following:
 - 1. Verification of the location and accessibility of all access panels for components or equipment.
 - 2. Verification of the location, installation and calibration for all components of the Building Automation System.
 - 3. Verification of the operation of all components of the Building Automation System on a stand-alone basis. This includes all valve and damper actuators.
 - 4. Verification of the physical response of all components of the Building Automation System to setpoint adjustments or other changes.
 - 5. Verification of the operation of any newly installed Fire / Smoke Dampers.
 - 6. Verification of the operation of all HVAC equipment and systems in every specified mode of operation and every control sequence.
 - 7. Verification of the operation of all HVAC equipment and systems in "Normal Occupied Mode", "Unoccupied Mode", and under emergency conditions.

2.9 Deferred Testing

- A. Deferred Testing includes any Functional Performance Test that could not be completed due to seasonal requirements. All Deferred Testing shall be conducted during the Warranty Phase Commissioning and shall be clearly identified by the Commissioning Authority.

2.10 Commissioning Issues Log and Deficiency Resolution

- A. The Commissioning Authority will report on any deficiencies discovered from the Pre-Functional Checklists. A Commissioning Issues Log will be maintained and distributed to the appropriate Commissioning Team Members for resolution. The Commissioning Authority will work with the other

members of the Commissioning Team to ensure that any reported deficiencies are completely understood as well as any responses or corrective actions that are required for resolution of the stated deficiency. It will be the Owner's responsibility to manage the Commissioning Issues Log for resolution of any outstanding issues or noted deficiencies. The Commissioning Authority will assist the Owner as required to verify completion of any items noted in the Commissioning Issues Log. After corrective actions have been taken, any test necessary to verify conformance with the Contract Documents will be conducted by the Commissioning Authority. If issues remain unresolved at the end of the project and explanation and clarification of all unresolved issues must be included in the final commissioning report.

B. Deficiencies or incomplete work identified by the Commissioning Authority shall be corrected by the responsible installing contractor and verification performed by the Commissioning Authority for compliance with the Contract Documents prior to the start of Warranty Phase Commissioning.

2.11 The following equipment and systems will be tested by the Commissioning Authority to verify that the systems are fully operational and function as described in the individual project specifications sections, including any integration into the Building Management System.

1. HVAC Equipment and Systems
2. Building Automation System

2.12 Owner Training

A. The Owner and / or their designated personnel shall receive thorough training in the operation and maintenance for all components, equipment and systems for the project. The Commissioning Authority will be available to help coordinate and assist in the scheduling of all training activities. The following activities should be included as part of the Owner Training:

1. The Commissioning Authority should review all training agendas with the trainers.
2. The Design Professionals should provide and review information with the Owner and their designated staff on all relevant design approaches that have been incorporated into the project especially those that are directly related to the operation and maintenance of the facility.
3. The installing prime contractors and sub-contractors should train the Owner and their designated staff on construction materials and techniques that were included in the project especially those that are directly related to the operation and maintenance of the facility.
4. Equipment Vendors shall train the Owner and their designated staff in the proper start-up and shut down procedures for all components, equipment and systems. Training sessions shall include normal operational features and requirements for routine maintenance. Training sessions should be specific in nature and incorporate the exact components, equipment and systems that have been installed for the project.

2.13 Final Commissioning Report

A. The Commissioning Authority will assemble documentation from all phases of the Commissioning Process into a final Commissioning Report. The final Commissioning Report shall incorporate final record documents for each component, equipment and system as applicable. The final Commissioning Report shall include the following items:

1. Title Page
2. Certification Page
3. Summary
4. Completed Pre-Functional Checklists and Start-up Reports
5. Completed Functional Performance Tests
6. Commissioning Issues Log
7. Site Observation Reports
8. Instrument Calibration / Certification Data
9. Any applicable project correspondence

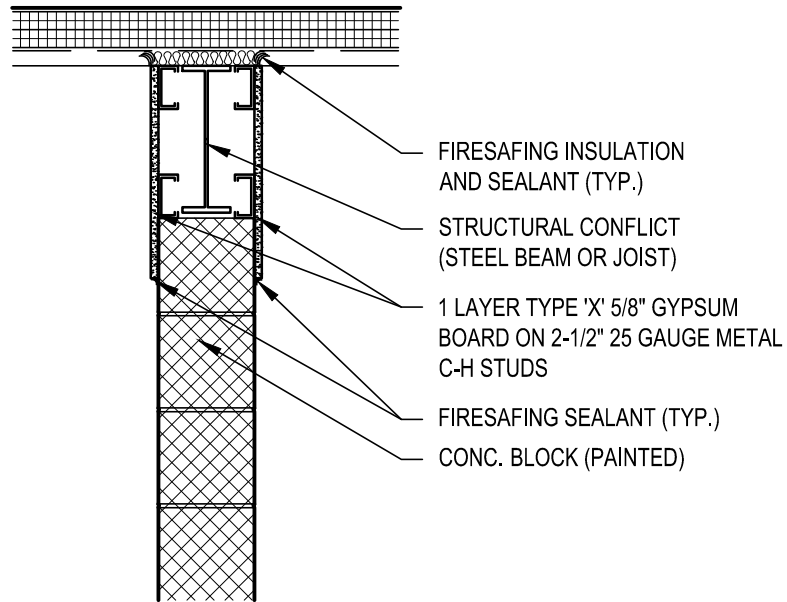
3.1 Warranty Phase Commissioning

- A. Warranty Phase Commissioning is an effort to ensure that any outstanding warranty issues are resolved, any deferred testing is performed and accepted, and any outstanding construction phase issues are resolved. Any questions, issues or concerns from the Owner's Operations and Maintenance Staff that should also be investigated and resolved.

3.2 Warranty Phase Commissioning Activities

- A. Deferred Testing – Any Acceptance Phase testing that was deferred shall be performed by the Commissioning Authority during the Warranty Phase.
- B. Construction Phase Commissioning Follow-Up – The Commissioning Authority will work with the Owner to coordinate warranty related issues and any follow-up work to be performed by the installing contractors. The Commissioning Authority will be available to the Owner to verify resolution of any warranty issues including additional Functional Performance Testing, if required.
- C. Additional Training – The Commissioning Authority be available to the Owner's Operations and Maintenance Staff to assist with specific questions related to operation or maintenance of components, equipment or systems and identify any additional training that is required. Additional, more detailed training sessions may be required for more complex systems such as Building Automation Systems or systems that were not in operation at the time of substantial completion.

END OF SECTION 01 91 13



9
A-4

TYPICAL WALL CONFLICT DETAIL

SCALE: 3/4" = 1'-0"

TYPICAL WALL CONFLICT DETAIL

REFERENCE DRAWING: A-4

AEM ARCHITECTS INC.

3700 PERKIOMEN AVENUE, READING, PA 19606-2795
Phone: 610.779.3220 Fax: 610.779.9022 www.aem-arch.com

STEAM BOILER REPLACEMENT FOR
ENERSYS

2366 BERNVILLE ROAD, BERN TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

JOB NO.: 18037.03
DATE: 07.29.20
DRAWN BY: JDK

SKA-1

PERFORMANCE BOND

Bond No.: _____ Amount: \$ _____

_____, as principal (the "Contractor"), and

_____, as surety (the "Surety"), are firmly bound to

ENERSYS DELAWARE, INC.

as obligee (hereinafter called the "Owner"), in the sum of _____ Dollars

(\$ _____), for the payment of which we bind ourselves, our heirs, executors, legal representatives, successors and assigns, jointly and severally, by this Bond.

Background. The Contractor submitted to the Owner a bid (the "Bid") to perform certain _____ Work for the Owner in connection with a project known as "Enersys Technology Center Steam Boiler Replacement," such Work to be performed pursuant to plans, specifications and other related contract documents that are incorporated into the Bid by reference. The Bid and other contract documents shall be deemed a part hereof as fully as if set out herein, and shall together be referred to as the "Contract Documents." The Owner is a "contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (the "Act"). Under the Contract Documents, it is provided that if the Contractor shall furnish this Bond to the Owner, and if the Owner shall make an award to the Contractor in accordance with the Bid, then the Contractor and the Owner shall enter into an agreement with respect to performance of such work (the "Agreement"), the form of which Agreement is set forth in the Contract Documents. It is a condition of the Contract Documents that this Bond shall be furnished by the Contractor to the Owner.

NOW, THEREFORE, intending to be legally bound, the Contractor and Surety agree as follows:

1. The Contractor and the Surety, jointly and severally, bind themselves for performance of the obligations of the Contractor under the Agreement and other Contract Documents, and to all of the terms of this Performance Bond. The Contractor and Surety understand that time is of the essence in performing their respective obligations under the Contract Documents and this Bond.

2. The Contractor and Surety will be relieved of their obligations under this Bond if and when the Contractor shall perform all of its obligations under the Agreement and other Contract Documents in the manner provided therein, including the making of any payments due to the Owner and its employees, directors or agents, and the Contractor and the Surety shall perform all of their obligations under this Bond. This Bond shall remain in force and effect until all of the foregoing conditions are fulfilled.

3. If the Owner terminates its Agreement with the Contractor for cause pursuant to the Contract Documents or if the Contractor has abandoned its work in violation of the Contract Documents, the Surety will have the following rights and obligations:

a. As Option 1, the Surety shall fulfill the performance of all obligations of the Contractor under the Contract Documents and this Bond. Pursuant to Option 1, any replacement contractor retained by the Surety to fulfill the performance of the obligations of the Contractor must be qualified as a responsible contractor under Pennsylvania law. The original Contractor shall not serve as the Surety's replacement contractor. The Surety shall provide the Owner, upon request, information on the pertinent qualifications of any proposed replacement contractor. The Owner will pay the unpaid contract price to the Surety as work progresses, under the payment terms of the Contract Documents.

b. As Option 2, the Surety may request to enter a written agreement with the Owner, pursuant to which the Owner shall complete all unfulfilled work of the Contractor pursuant to the Contract Documents, with reimbursement from Surety to Owner if the cost of finishing the work, together with all other expenses for which the Surety is liable, exceeds the unpaid balance to the Contractor under the Contract Documents. If the Surety wishes to make a request to the Owner pursuant to Option 2, it must do so within 30 days of receipt of written notice by the Owner that the Agreement with the Contractor has been terminated or that the Contractor has abandoned its work under the Contract Documents. The Owner shall be under no obligation to accept a request by the Surety to utilize Option 2, and if such a request is not timely made or is denied, the Surety shall proceed pursuant to Option 1.

4. Without limiting the obligations otherwise stated in this Bond, the Surety shall be liable under this Bond to pay the Owner the following to the extent the Contractor does not make such payment to the Owner: (a) any money the Contractor is obligated to pay the Owner under the Contract Documents, including any liquidated damages; and (b) any cost, expense, liability or damage incurred by the Owner (including any fees or costs of attorneys, architects, engineers, construction managers or other consultants) arising from (i) any default, failure or termination of the Contractor, (ii) the Owner's enforcement of Contractor or Surety obligations under this Bond, or (iii) any delay in performance of the Contractor's scope of Work caused by the Contractor or Surety that violates a project schedule approved pursuant to the Contract Documents, without regard to whether such delay occurs before or after commencement of the Surety's obligations pursuant to Paragraph 3 of this Performance Bond.

5. Amounts due and not paid to Owner when due under this Bond shall bear interest from the date the payment is due at the legal rate prevailing in Pennsylvania.

6. This Bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract Documents not increasing the contract price more than twenty percent (20%), so as to bind the Contractor and the Surety to the performance of the Contract Documents as so amended, and so as to increase the Bond amount by the increased contract price amount. The term "amendment," wherever used in this Bond and whether referring to this Bond, the Contract Documents, or the Agreement shall include any alteration, addition, extension or modification of any character whatsoever.

7. The Contractor and the Surety agree that none of the following will in any way reduce the Surety's obligations under this Bond, and the Surety waives notice of any of the following: (1) any change, alteration or addition to the terms of the Contract Documents or to the work to be performed thereunder; (2) any extension of time; (3) any act of the forbearance of either the Contractor or the Owner toward the other; (4) any acceleration of payments to the Contractor resulting in payments to the Contractor of more than the amount to which the Contractor is entitled under the Contract Documents or in advance of the time required under the Contract Documents.

8. No settlement between the Owner and the Contractor shall abridge the right of any other beneficiary hereunder having a claim not yet asserted or satisfied.

9. Owner's acceptance of the Contractor's work under the Contract Documents or approval of final payment to the Contractor shall not terminate the performance obligations of Contractor and Surety under the Contract Documents and this Bond, and shall not waive any later claim for nonperformance.

10. Owner may at any time, but is not obligated to, notify Surety of Owner's concerns about Contractor performance, and send to Surety copies of any communication to Contractor.

11. This Bond shall be interpreted in accordance with the laws (including the common law) of the Commonwealth of Pennsylvania. Exclusive jurisdiction and venue for any litigation concerning this Bond shall exist in the Court of Common Pleas in the county in which the project is located. The Contractor and the Surety waive a jury trial in any such litigation.

12. This Bond is executed and delivered under the subject to the Act.

IN WITNESS WHEREOF, the Contractor and the Surety cause this Bond to be signed, sealed and delivered this _____

day of _____, 20_____.

(Individual Contractor)

WITNESS:

_____(SEAL)
Signature of Individual
Trading and Doing Business As

(Partnership Contractor)

WITNESS:

Name of Partnership

By: _____ (SEAL)
Partner

By: _____ (SEAL)
Partner

By: _____ (SEAL)
Partner

(Corporation Contractor)

ATTEST:

(Assistant) Secretary

(CORPORATE SEAL)

or (If Appropriate)

Name of Corporation

By: _____
(Vice) President

WITNESS:

Name of Corporation

*By: _____
Authorized Representative

*Attach appropriate proof, dated as of the same date as the Bond, evidencing authority to execute in behalf of the corporation.

(Corporation Surety)

Name of Corporation

WITNESS:

**
Attorney-in-Fact

**Attach an appropriate power of attorney, dated as of the same date as the Bond, evidencing the authority of the attorney-in-fact to act in behalf of the corporation.

PAYMENT BOND FORM

KNOW ALL MEN BY THESE PRESENTS that we, _____, as Principal (the "Principal"), and _____, a company organized and existing under the laws of the _____ of _____, having its principal office at _____, and authorized to do business in the Commonwealth of Pennsylvania, as Surety (the "Surety"), are held and firmly bound unto _____, as Obligee (the "Obligee"), as hereinafter set forth, in the full and just sum of _____ Dollars (\$ _____), lawful money of the United States of America, for the payment of which we bind ourselves, our heirs, executors administrators, successors and assigns, jointly and severally, firmly by these presents.

WITNESSETH THAT:

WHEREAS, the Principal heretofore has submitted to the Obligee a certain Bid, dated _____, 20_____(the "Bid"), to perform certain _____ Work for the Obligee, in connection with
(Name of Contract)

(Name of Project and Location Municipality, County and State)

pursuant to Drawings, Specifications and other related documents constituting the Bid Documents, which are incorporated into the Bid by reference (the "Contract Documents"), as prepared by AEM Architects, Inc., Registered Architect(s) of 3700 Perkiomen Ave., Reading, Pennsylvania; and

WHEREAS, the Obligee is a "contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (the "Act"); and

WHEREAS, the Act, in Section 3(a), requires that, before an award shall be made to the Principal by the Obligee in accordance with the Bid, the Principal shall furnish this Bond to the Obligee, with this Bond to become binding upon the award of a contract to the Principal by the Obligee in accordance with the Bid; and

WHEREAS, it also is a condition of the Contract Documents that this Bond shall be furnished by the Principal to the Obligee, and..."

WHEREAS, under the Bidding Documents, it is provided, inter alia, that if the Principal shall furnish this Bond to the Obligee, and if the Obligee shall make an award to the Principal in accordance with the Bid, then the Principal and the Obligee shall enter into an agreement with respect to performance of such work (the "Agreement"), the form of which Agreement is set forth in the Contract Documents.

NOW, THEREFORE, the terms and conditions of this Bond are and shall be that if the Principal and any subcontractor of the Principal to whom any portion of the work under the Agreement shall be subcontracted, and if all assignees of the Principal and of any such subcontractor, promptly shall pay or shall cause to be paid, in full, all money which may be due any claimant supplying labor or materials in the prosecution and performance of the Work in accordance with the Agreement and in accordance with the Contract Documents, including any amendment, extension or addition to the Agreement and/or to the Contract Documents, for material furnished or labor performed, then this Bond shall be void; otherwise, this Bond shall be and shall remain in force and effect.

This Bond, as provided by the Act, shall be solely for the protection of claimants supplying labor or materials to the Principal or to any subcontractor of the Principal in the prosecution of the Work covered by the Agreement, including any amendment, extension or addition to the Agreement and is conditioned for the prompt payment of all such materials furnished and labor supplied or performed in the prosecution of any portion of the work. The term "claimant", when used herein and as required by the Act, shall mean any individual, firm, partnership, association or corporation. The phrase "labor or materials", when used herein and as required by the Act, shall include, without limitation, public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site of the work covered by the Agreement. As required by the Act, the provisions of this Bond shall be applicable whether or not the material furnished or labor performed enters into and becomes a component part of the public building, public work or public improvement contemplated by the Contract Documents and the Agreement.

As provided and required by the Act, the Principal and the Surety agree that any claimant, who has performed labor or furnished material in the prosecution of the Work in accordance with the Agreement and in accordance with the Contract Documents, including any amendment, extension or addition to the Agreement and/or to the Contract Documents, and who has not been paid therefore, in full, before the expiration of ninety (90) days after the day on which such claimant performed the last of such labor or furnished the last of such materials for which payment is claimed, may institute an action upon this Bond, in the name of the claimant, in assumpsit, to recover any amount due the claimant for such labor or material, and may prosecute such action to final judgment and may have execution upon the judgment; provided, however, that: (a) any claimant who has a direct contractual relationship with any subcontractor of the Principal, but has no contractual relationship, express or implied, with the Principal, may institute an action upon this Bond only if such claimant first shall have given written notice, served in the manner provided in the Act, to the Principal within (90) days from the date upon which such claimant performed the last of the labor or furnished the last of the materials for which payment is claimed, stating, with substantial accuracy, the amount claimed and the name of the person for whom the work was performed or to whom the material was furnished; and (b) no action upon this Bond shall be commenced after the expiration of one (1) year from the day upon which the last of the labor was performed or material was supplied, for the payment of which such action is instituted by the claimant; and (c) every action upon this Bond shall be instituted either in the appropriate court of the County where the Agreement is to be performed or of such other County as Pennsylvania statutes shall provide, or in the United States district court for the District in which the project, to which the Agreement related, is situated, and not elsewhere.

This Bond is executed and delivered under and subject to the Act, to which reference hereby is made.

The Principal and the Surety agree that any alterations, changes and/or additions to the Contract Documents, and/or any alterations, changes and/or additions to the work to be performed under the Agreement in accordance with the Contract Documents, and/or any alterations, changes and/or additions to the Agreement, and/or any giving by the Obligees of any extensions of time for the performance of the Agreement in accordance with the Contract Documents and/or any act of forbearance of either the Principal or the Obligees toward the other with respect to the Contract Documents and the Agreement, and/or the reduction of any percentage to be retained by the Obligees as permitted by the Contract Documents and by the Agreement, shall not release, in any manner whatsoever, the Principal and the Surety, or either of them, or their heirs, executors, administrators, successors and assigns, from liability and obligations under this Bond; and the Surety, for value received, does waive notice of any such alterations, changes, additions, extensions of time, acts of forbearance and/or reduction of retained percentage.

If the Principal is a foreign corporation (incorporated under any laws other than those of the Commonwealth of Pennsylvania) then further terms and conditions of this Bond are and shall be that the Principal and the Surety shall not be discharged from liability on this Bond, nor this Bond surrendered until such Principal files with the Obligees a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all bonus taxes, penalties and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation, contributions, penalties and interest due the Commonwealth of Pennsylvania from said Principal or any foreign corporation, subcontractor thereunder or for which liability has accrued but the time for payment has not arrived, all in accordance with the provisions of the Act of June 10, 1947, P.L. 493, of the Commonwealth of Pennsylvania.

Any dispute resolution proceeding, legal or equitable, under this Payment Bond, shall be instituted in the Court of Common Pleas of Berks County and in such dispute resolution proceeding, Obligees may join both Principal and Surety as parties, and Principal and Surety hereby consent to such joinder, jurisdiction and venue. This Payment Bond shall be governed by, construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania, without regard to principles of conflicts of laws.

IN WITNESS WHEREOF, the Principal and the Surety cause this Bond to be signed, sealed and delivered this _____ day of _____, 20_____.

(Individual Principal)

_____(SEAL)

(Signature of Individual)
Trading and doing business as:

Witness:

(Partnership Principal)

(Name of Partnership)

Witness:

BY: _____(SEAL)

Partner

BY: _____(SEAL)

Partner

BY: _____(SEAL)

Partner

(Corporation Principal)

(Name of Corporation)

ATTEST:

Secretary (Assistant Secretary)

BY: _____

(Vice President)

CORPORATE SEAL

or (if appropriate)

Witness:

*BY: _____

Authorized Representative

*Attach appropriate proof, with raised corporate seal, dated as of the same date as the Payment Bond, evidencing authority to execute in behalf of the corporation.

(Corporation Surety)

(Name of Corporation)

Witness:

**BY: _____

Attorney-in-fact

**Attach an appropriate power of attorney with raised corporate seal, dated as of the same date as the Bond, evidencing the authority of the Attorney-In-Fact to act on behalf of the Corporation Surety. The Power of Attorney must show that the Attorney-in-Fact is a Pennsylvania Resident.

END OF DOCUMENT