



## SPECIFICATIONS

### **Bus Maintenance, Servicing, and Storage Facility Expansion**

### **Gas Detection Project**

Contract No. 1

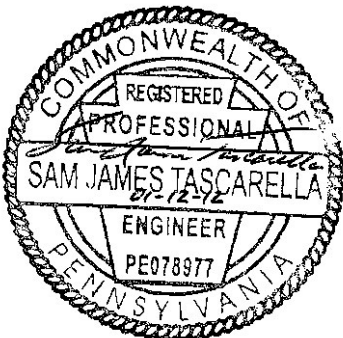
**ISSUE FOR BID**

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Centre Area Transportation  
Authority (CATA)  
State College, PA

January 22, 2012





**General Conditions  
and Technical Specifications**



# Centre Area Transportation Authority General Conditions

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## **INSTRUCTIONS TO BIDDERS AND CONTRACT CONDITIONS**

1. **GENERAL DESCRIPTION OF WORK TO BE DONE AND LOCATION:** Without intending to limit or restrict the extent of the work required under this Project as more fully defined in the specifications, the work is generally comprised of the following:

Contract No. 1 – Gas Detection Project. Provide general building demolition and site construction in accordance with the Contract Documents.

All work to be done under this Contract is located at the Centre Area Transportation Authority's (CATA), 2081 W. Whitehall Road, State College, PA 16801-2623, Pennsylvania.

2. Five (5) copies of the bid must be received no later than 2:00 PM, prevailing time, February 22, 2012 and should be addressed to:

Jaime Miller  
Centre Area Transportation Authority  
2081 W. Whitehall Road  
State College, PA 16801-2623

The bids received will be publicly opened and read at the time and date specified. Bids which are received after this date and time for any reason will not be accepted and will be returned to the bidder unopened. CATA will not be responsible for late postal delivery service nor will the postmark date be considered in honoring bids.

3. The bid shall be in a sealed envelope clearly marked "Contract 1 – Gas Detection Project."
4. The Bidder shall have a minimum of three (3) years experience within the last ten (10) years implementing building construction projects similar in nature to the Work of this contract. The bid shall include a list of five recent clients for whom similar projects have been completed; the list shall include complete contact information for an individual at each client who is familiar with the work done.
5. The bid shall include a description of the firm, including history, size, principals and specialty area, if any.
6. All bids and contracts are subject to a grant between CATA and the Pennsylvania Department of Transportation. All applicable Federal and State laws, municipal ordinances, codes, statutes and/or orders and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract Documents throughout, and they shall be deemed to be included in the Agreement the same as though herein written out in full.
7. The bidder shall provide within ten (10) days of receipt of CATA's written request additional information as requested by CATA to assist in its determination that the bidder is responsible and has the financial, legal and technical capacity to perform the work.

8. The Bidder shall include the following signed documents with its bid:
- Form of Bid
  - Bid Bond
  - Non-Collusion Affidavit, including one for each subcontractor
  - Nondiscrimination/ Clause, including one for each subcontractor
  - Certification Regarding Lobbying, including one for each subcontractor
  - Debarment Certification – Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters, including one for each subcontractor
  - Contractor Integrity, including one for each subcontractor
9. **BID BOND:** A Bid Bond or a Cashier's Check payable to the Centre Area Transportation Authority in the amount of not less than five percent (5%) of the largest possible total for the bid must accompany the bid. The Bid Bonds or Cashier's Checks of all bidders will be held by CATA until the bids have either been rejected in whole or in part, or the award of the contract or contracts have been made. At that point, the Bid Bond or Cashier's Check will be returned except that the Bid Bond or Cashier's Check for the successful bidder will be returned after the Agreement is executed by CATA and the successful bidder. The full amount of the Bond or Check shall be forfeited and payable as damages occasioned to CATA if the successful bidder fails to execute the Agreement and furnish the specified bonds and other documents set forth in Paragraphs 23, 25, 26 and 27 within ten (10) days after notification of the Notice of Intent to Award the Contract to the bidder.
10. **BID FORM:** Bids shall be submitted on the forms provided. The bid shall be signed by an official authorized to bind the offer, and it shall contain a statement to the effect that the bid is firm for a period of at least sixty (60) days from the closing date for the submission of bids. The Bid package submitted shall also include the Bid Bond and the Certificates.
- All required items in the Bid Form shall be completed and responded to appropriately. The failure of the Bidder to fully respond to CATA's Invitation-to-Bid may result in the Bid being rejected as non-responsive in accordance with applicable law. CATA may reject the bid of any bidder failing to meet the requirements of the Invitation-to-Bid or any other requirements of the Contract Documents. Bidders are advised that any omission, alteration of form, conditional or un-invited alternate bid or an unbalanced bid may render the bid non-responsive under applicable law. However, CATA reserves the right, in its sole discretion, to waive technical defects or irregularities in the bid that do not render the bidder non-responsive under applicable law.
11. **PREBID MEETING:** A non-mandatory pre-bid Meeting will be held at the project site at 2081 W. Whitehall Road, State College, PA 16801-2623, PA on February 8, 2012, beginning at 11:00 AM. An opportunity will be provided at the Pre-Bid Meeting to inspect the project site.
12. **EXAMINATION OF CONTRACT DOCUMENTS AND SITE.** It is the responsibility of each Bidder before submitting a bid to (a) examine the Contract Documents, the Invitation to Bid, the Instructions to Bidders and Contract Conditions, plans and specifications, including all addenda and all documents that will form, compose or be included in the Contract Documents, thoroughly, (b) perform a site visit to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, (c) consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully note Bidder's observations with the Contract Documents and (e) notify CATA of all conflicts, errors or discrepancies in the Contract Documents. Submission of a bid will be considered as conclusive

evidence of the Bidder's complete examination of the site and understanding of the plans and specifications.

13. **SITE VISIT:** Bidders are required to visit the site of the work to obtain first-hand knowledge of the existing conditions. A site inspection will be part of the pre-bid meeting or visits to the site shall be made by **pre-arranged appointments** by contacting Jaime Miller, at (814) 238-2282, ext.164 or by e-mail at [jmiller@catabus.com](mailto:jmiller@catabus.com). In any event, no allowances or extra payments shall be made on account of site conditions which reasonable inspection would have disclosed.
14. **COMPLIANCE WITH SPECIFICATIONS:** In all cases, items bid must be exactly as specified. If a bidder finds any discrepancy or ambiguity, or omission from the drawings and/or specifications, it must promptly notify CATA in writing. CATA will, if it determines it to be necessary, send a written addendum for clarification purposes to all bidders. Changes to the specifications shall be made by written addenda only. CATA is not responsible for misinterpretation of the specifications by the bidder.
15. **ADDENDA:** During the bidding period, bidders may be furnished Addenda by mail, fax or email for additions and/or deletions to, or alterations of, the Contract Documents. Any interpretations of this Invitation to Bid and any supplemental instructions will be in the form of a written Addendum which will be forwarded to all prospective firms on record no later than five (5) days prior to the date fixed for the opening of the bids. Every request for such interpretation shall be in writing addressed to CATA, ATTN: Jaime Miller, 2081 W. Whitehall Road, State College, PA 16801-2623, or by e-mail [jmiller@catabus.com](mailto:jmiller@catabus.com). Such request, to be given consideration, must be received at least seven (7) days prior to the bid opening date. All addenda shall become part of the Contract and must be included in the bid price. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Bidders shall acknowledge receipt of each addendum where indicated on the bid form.
16. **CLARIFICATIONS, EXCEPTIONS AND APPROVED EQUALS:** The various materials and products specified in the specifications by name or description are given to establish a standard of quality and cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable. A material or product of lesser quality would not be acceptable. Where proprietary names are used, whether or not followed by the words "or as approved equal", they shall be subject to equals only as approved by CATA. A minimum of seven (7) days before the bid opening, all potential bidders may request CATA to give clarification, exceptions, or approved equals for portions of the technical specifications and drawings. The bidder shall include sufficient information to document its request that the material or product is equal to the material or product specified. Written notice of any changes or approved equal allowed will be mailed no less than five (5) days prior to bid opening to all potential bidders. The bidder must comply with all specified items or the bid will be considered non-responsive. No exceptions to the technical specifications and drawings will be allowed after the bid opening.
17. **CONDITIONAL BIDS:** Conditional bids, or those which take exception to the specifications, may be considered nonresponsive and be rejected.

18. **BID PRICE AND TAXES:** The bid price shall include all items specified including all items of labor, materials, tools, equipment, insurance and other costs necessary to fully complete the work. The successful bidder shall be responsible for payment of all applicable sales, consumer, user and other similar taxes as required by law. CATA, as a municipal authority, is exempt from payment of many of these taxes in many instances, and such taxes are not to be included in the bid price. The successful proposer is responsible for reviewing all pertinent Commonwealth of Pennsylvania statutes and complying with their requirements.
19. In no case shall CATA be liable for any costs incurred by any bidder for bid preparation, presentation or any other reason prior to execution of a contract.
20. **LABOR PROVISIONS:** Bidders are advised that this project is subject to and will be governed by Pennsylvania Prevailing Wage requirements, including amendments and supplements thereto. Bidders shall prepare their bids after giving consideration to the applicability of said requirements to the work involved and all other laws and regulations, State and/or Federal, applicable to such projects. Appendix B provides the General Wage Decision from the Pennsylvania Department of Labor and Industry applicable to this project.
21. **STEEL PRODUCTS PROCUREMENT ACT OF 1978:** All steel products used or supplied in the performance of this Contract shall be products produced from steel made in the United States in conformity with the Commonwealth of Pennsylvania's Steel Products Procurement Act of 1978 (Act No. 3 of 1978, P.L. 6 (73 P.S. 1881 et seq.)) and in full conformity with the Buy America provisions of 49 U.S.C. 5323(j) and the applicable regulations in 49 CFR Part 661 unless the Bidder specifically sets forth any exceptions on its Bid Form.
22. **PROMPT PAYMENT:** The Contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than twenty (20) days from the receipt of each payment the Contractor receives from CATA. The Contractor agrees further to return retainage payments to each subcontractor within twenty (20) days after the subcontractor's work is satisfactorily completed. CATA shall be notified of any delay or postponement of payment from the above referenced time frame and such notification shall set forth, with appropriate documentation, the full details of the reasons upon which the Contractor based its actions. Any delay or postponement of payment from the above referenced time frame may occur only for good cause. CATA shall not be obligated to make a progress payment or final payment to a Contractor who has failed to make payments promptly to its subcontractors, for which CATA has made payment, without good cause.
23. **INSURANCE REQUIREMENTS:** Prior to execution of the contract, Contractor and its subcontractors shall provide CATA with evidence of insurance in form and substance acceptable to CATA. Execution of a contract is conditional on receipt of such evidence; failure to obtain or maintain required coverage during the entire term of the contract is reason for CATA to terminate the contract. Minimum insurance requirements are:
  - a. **Workers' Compensation Insurance**

Insurance in accordance with the laws of the Commonwealth of Pennsylvania and, if applicable, other workers' compensation type insurance (e.g. USL&H).

\$1,000,000 Employer's Liability

b. Automobile Liability Insurance

\$2,000,000 combined single limit per occurrence (Insurance Code 1 –any vehicle)

\$5,000 Personal Injury Protection limit per person

c. General Liability

\$2,000,000 per occurrence.

\$3,000,000 annual aggregate limit, if any, with at least \$2,000,000 applying exclusively to this agreement.

These limits can be any combination of insurance such as primary \$1,000,000 combined single limit per occurrence with \$2,000,000 specific job aggregate limit plus \$1,000,000 umbrella limit. Contractor agrees that if \$1,000,000 or more of the primary aggregate limit is exhausted by paid and/or reserve claim(s) and/or any event(s) reasonably likely to be a claim(s), contractor will purchase insurance to fully replenish the aggregate unless the aggregate is so diminished after insurance policy expiration.

d. For all coverages:

- 1) The policy form must be on an “Occurrence” basis.
- 2) The insurance company must have an A.M. Best’s Rating of A- or higher and VI or higher.
- 3) The insurance company must provide (not just endeavor to provide) CATA’s project manager with at least thirty (30) day notice of cancellation or material change.
- 4) The policy terms (conditions, exclusions, limitations, etc.) must be acceptable to CATA.
- 5) There must be no cross-insured liability exclusions.
- 6) The certificate of insurance must not include a “Matter of Information only” limitation.
- 7) CATA and its employees and officials should be included as Additional Insured as respects this contract.
- 8) CATA and its board members, officers, agents and employees shall be listed as an Additional Insured under the terms of the policy.

- e. The Certificate of Insurance shall be submitted to CATA by the successful bidder within ten (10) calendar days from the date the Notice of Intent to Award is received. Upon request from CATA, the Contractor shall provide documentation, including a copy of the policy, that the appropriate and applicable insurance has been procured.

- f. The General Contractor shall carry Builder's Risk Insurance for the value of the entire project. The successful bidder for the General Contract shall provide evidence of appropriate and applicable Builder's Risk Insurance, including providing a copy of the Builder's Risk Insurance policy to CATA. The insurance policy shall include a loss payable clause and the claims will be settled and payable to CATA. The Certificate of Insurance shall be submitted to CATA by the successful bidder within ten (10) calendar days from the date the Notice of Intent to Award is received. The insurance company providing the Builder's Risk Insurance for the contractor shall provide CATA with at least a thirty (30) day written notice of cancellation or material change.
24. AWARD OF CONTRACT: The award of the contract will be made to the responsive and responsible low bidder whose bid conforms to the specifications documents. CATA also reserves the right to postpone the bid opening for its own convenience and to accept or reject any or all bids, all or in part, as it deems to be in its best interests. CATA will award the contract to the responsible bidder or shall reject all bids for a contract within sixty (60) days of the date of the bid opening.
25. BONDS: In addition to the Bid Bond, a Performance Bond for 100 percent (100%) of the contract price and a Payment Bond of 100% will be required of the successful bidder within ten (10) working days after Notification of Intent to Award. The Performance and Payment Guaranty in the form of a Performance and Payment Bond or an Irrevocable Letter of Credit, of the format and containing all provisions found in Section 00100 and Attachment 1, is required.

The contractor is required at all times during the period of the contract to have a valid Performance and Payment Guaranty in force covering the work being performed. The bond or Irrevocable Letter of Credit must be in an amount equal to 100% of the amount of the contract and must guaranty to CATA the satisfactory performance of the work covered in such contract as well as full payment of all suppliers, materialmen, laborers, or sub-contractors employed in the work.

In lieu of the bond or letter of credit required by this section, the contractor may furnish an alternate form of security in the form of cash, money order, certified check, or cashier's check, payable to CATA. Such alternate forms of security shall be for the same purpose and shall be subject to the same conditions as those applicable to the bond or letter of credit required by this section.

Qualifications of Surety: Performance and Payment Bonds issued to meet these requirements, must be executed by a surety company of recognized standing, authorized to do business in the Commonwealth of Pennsylvania as a surety company, having a resident agent in the Commonwealth of Pennsylvania and having been in business with a record of successful continuous operation for at least five years. In addition to the above minimum qualifications, the surety company shall hold a current certificate of authority as acceptable surety on federal bonds in accordance with the United States Department of Treasury Circular 570, Current Revisions. If the amount of the Bond exceeds the underwriting limitation set forth the circular, the net retention of the surety company shall not exceed the underwriting limitation in the circular, and the excess risks must be protected by coinsurance, reinsurance, or other methods in accordance with Treasury Circular 297, revised September 1, 1978 (31 CFR Section 223.10 Section 233.111). Further, the surety company shall provide CATA with evidence satisfactory to CATA that such excess risk has been protected in an acceptable manner.

The surety company shall have a Best's rating of A VII or better or a rating otherwise acceptable to

CATA.

The successful bidder shall execute four (4) counterparts of the bonds. In case of failure of the Bidder to execute and deliver the bonds, CATA may at its option consider the Bidder in default, in which case the Bid Bond accompanying the bid shall become the property of CATA.

26. **WAIVER OF LIEN:** The successful contractor and/or subcontractors, as appropriate, will be required to file and provide a Waiver of Lien before contract can commence.
27. **EXECUTION OF AGREEMENT:** The successful bidder shall be required within ten (10) calendar days after receipt of the Notice of Intent to Award is received to deliver to CATA the Contract Agreement in the form provided fully executed. A sample of the Agreement to be executed by the Contractor is enclosed for a bidder's review. The successful Bidder shall execute the Agreement in no less than four (4) counterparts. In case of failure of the Bidder to execute and deliver the Agreement, CATA may at its option consider the Bidder in default, in which case the Bid Bond accompanying the bid shall become the property of CATA.
28. **NOTICE TO PROCEED:** The Notice to Proceed shall be issued to the Contractor within thirty (30) days of the award of the contract unless the time is extended by the mutual written consent of CATA and the Contractor. In case the Performance Bond, Payment Bond, Agreement and/or the Certificate of Insurance submitted by the Contractor do not meet the requirements of the Contract Documents and changes are to be made before it can be accepted by CATA, the Contractor is obligated to accept an extension of the date of the issue of the Notice to Proceed for that period of additional time required to furnish acceptable documents.
29. **TIME OF COMPLETION:** The work shall be completed within 120 calendar days from the date of receipt by Contractor of the Notice to Proceed.
30. **PAYMENT:** The application for payment shall be made in accordance with the provisions described in Section 01026. CATA will forward payment to the Contractor within forty-five (45) days of receipt of an approved Application for Payment.
31. **PROTEST AND APPEAL PROCEDURES:** Refer to Appendix C for protest and appeal procedures.
32. **GUARANTY:** The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of Substantial Completion. CATA will give notice of observed defects with reasonable promptness. In the event, the Contractor shall fail to make such repairs, adjustments or other Work that may be necessary by such defects, CATA may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.
33. **INDEMNIFICATION**

The Contractor agrees to defend, indemnify and hold harmless the Centre Area Transportation Authority, (CATA), its Board of Directors, officers, agents, servants and employees from and against any and all claims, judgments and awards, including court costs and reasonable counsel fees, (hereinafter collectively referred to as "Damages") arising out of any claim, suit or action at law, in equity or otherwise, of any kind or nature whatsoever, which may be brought against the

Authority and/or any or all of the aforementioned acts arising out of any actions referenced in this agreement on account of any actual or alleged loss to property or injury to any person or persons (including death or mental injury), loss due to non-injury claims, including but not limited to harassment or violation of civil rights or violence to person or property. This shall include all losses Contractor's and its subcontractor's officers, agents, servants, employees or third parties, arising directly or indirectly out of or related to the performance or non-performance under this Agreement by the Contractor, and/or subcontractor(s), and/or their officers, agents, servants or employees, even if caused in part by any party indemnified hereunder, excepting only the sole negligence of CATA. Contractor shall also be liable to CATA for damages for loss of revenue, cost of money or capital, or loss of goodwill. CATA will provide prompt notice within forty-five (45) days of obtaining knowledge of a claim subject to this indemnification and make available all information and assistance that the Contractor may reasonably request. This indemnification requirement shall apply notwithstanding any determination by any insurance carrier as to coverage or failure or lapse of coverage set forth within this Agreement.

The aforementioned indemnification provision shall survive and continue in full force and effect beyond the expiration or termination of this Agreement as to any claim arising out of this Agreement. Furthermore, in the event that a claim arises under this Agreement, the Contractor has a duty to advise CATA of the status of the claim in which this Indemnification applies.

END OF SECTION

## **STANDARD CLAUSES: CONTRACTS WITH ONLY STATE FUNDING**

**Financial Assistance** - The procurement described in this IFB/RFP is to be financed by the Centre Area Transportation Authority through a grant from the Commonwealth of Pennsylvania. The successful bidder/offeror will be required to comply with all terms and conditions prescribed for third-party contracts in grant agreements between the Commonwealth of Pennsylvania and CATA.

**Single Bid/Proposal** - In the event a single bid/proposal is received, CATA may conduct a price and/or cost analysis of the bid/proposal. A price analysis is the process of examining the bid/proposal and evaluating the separate cost elements. A price analysis through comparison to other procurements must be made to a similar work project involving similar work specifications must be based on an established or competitive price of the elements being compared. Where differences exist, a detailed analysis must be made of the differences and costs thereto.

Where it is impossible to obtain a valid price analysis, it may be necessary for CATA to conduct a cost analysis of the bid/proposal price, in which case the cost analysis shall be made by competent, experienced auditors or price analysts. An engineer's estimate or comparison of the prices involved is insufficient.

**Pricing** - Prices to be quoted in this IFB/RFP shall include all items of labor, materials, tools, equipment, and other costs necessary to fully complete the production and delivery of the item(s) pursuant to these instructions and the contract proposal.

**Bid/Proposal Compliance** - All bids/proposals must be in strict compliance with requirements and provisions of these specifications, including provisions herein regarding "approvals", "approved equals", and "deviations". Changes to the specifications will be issued by addendum to all parties having received the bid/proposal. If the bidder/proposer intends to submit a bid/proposal containing "approved equals" or "deviations" from specific requirements of the specifications, the bidder/proposer must request such approvals by the date and in accordance with procedures specified for this solicitation. Approval of such request is solely at CATA's discretion. Bids/proposals may be submitted with such "approvals", "approved equals", or "deviations" only if specifically approved by CATA in writing prior to the bid/proposal opening date. Each bid/proposal must be accompanied by documentation of CATA's "approvals" for that bid/proposal. CATA shall notify other prospective bidders/proposers of any such "approvals." Unapproved deviations, exceptions, substitutions, alternates, or conditional qualifications contained in a bid/proposal may result in rejection of the bid/proposal on the grounds that it is non-responsive.

**Bid/Proposal Rejection** - CATA reserves the right to accept any bid/proposal, or to reject any or all bids/proposals, or to postpone the opening date/proposal award, or to award a Contract on such basis as CATA deems to be in its best interest.

**Withdrawal of Bids/Proposals** - Bids/proposals may be withdrawn upon written request received by CATA prior to the time fixed for opening bids or submitting proposals. No bid/proposal may be withdrawn for ninety (90) calendar days, or as specified in the IFB/RFP, after the time set herein for the public opening and reading of bids or after the proposal submission deadline, as appropriate, without CATA's written consent.

**Non-Collusion** - The bidder/proposer shall certify that the prices in this Bid/Proposal have been arrived at independently without collusion by completing the attached certification form.

**Debarment and Suspension** - CATA may not enter into contracts (and the Contractor may not enter into any subcontracts of \$25,000 or more at any time during performance of the work), with firms who are on the government-wide list of debarred or suspended firms. The prospective Contractor shall complete the certification included in this solicitation and submit it with the bid/proposal and further agrees that it will include the same certification, without modification, in all covered subcontracts (those for \$25,000 or more) and in all solicitations for such subcontracts. If the prospective Contractor or subcontractor is unable to certify to the statements in this certification, it shall attach an explanation to its bid or proposal. (See Attachment 1)

**Inspection** - In the case of bids, bidders may inspect all bids after tabulation.

**Taxes** - The successful bidder shall be responsible for payment of all applicable sales, consumer, user and other similar taxes as required by law. CATA, as a municipal authority, is exempt from payment of many of these taxes in many instances. The successful bidder is responsible for reviewing all Commonwealth of Pennsylvania statutes which are pertinent and for complying with their requirements.

**Payment Terms** - The Contract resulting from this IFB/RFP is subject to a financial assistance agreement between CATA and the Commonwealth of Pennsylvania. CATA will make payment to the Contractor as specified in the contract.

**Equal Employment Opportunity -**

- a) For all contracts except those for standard commercial supplies or raw materials, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, sex, disability, age or national origin. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, sex, disability, age or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- b) The Contractor will include the above clause in all subcontracts issued in conjunction with this Contract, except subcontracts for standard commercial supplies or raw materials.
- c) The Contractor agrees to comply with all applicable Equal Employment Opportunity provisions of the Commonwealth of Pennsylvania (all contracts).
- d) For all construction contracts, or modifications to such contracts, in excess of \$10,000, to be performed in geographical areas designated by the Office of Federal Contract Compliance Programs, and in construction subcontracts in excess of \$10,000 necessary in whole or in part to the performance of nonconstruction contracts and subcontracts covered by Executive Order 11245, Standard Federal Equal Employment Opportunity Construction Contract Specifications shall be incorporated by CATA into this Contract or by the Contractor into its subcontracts, as applicable. Applicable clauses of the Standard Specifications shall be provided by CATA as a separate Appendix to this Contract when applicable. (See Appendix A)

**Indemnification** - The successful bidder/offeror covenants and agrees to indemnify and hold harmless CATA, PA-DOT and all officers, agents and employees thereof from and against any and all claims, suits or losses (whether real or asserted) occurring or resulting to any and all persons, firms or corporations furnishing or supplying work, services, materials, or supplies in connection with the performance of the Contract and from any and all claims or losses (including death) occurring or resulting to any person, firm or corporation who may be injured or damaged by the Contract and from any and all claims or losses (including death) occurring or resulting to any person, firm or corporation who may be injured or damaged by the Contractor, its subcontractors, agents, servants, or employees, arising out of the performance of this Contract, including those arising out of any negligent act, error or omission on the part of the Contractor or its officers, agents, servants, employees, or sub-contractors/sub-consultants. The Contractor does hereby assume all liability and responsibility, including, but not limited to, costs and actual attorneys' fees for injuries, claims or suits, or suits for damages to persons or property of whatever kind or character, whether real or asserted, occurring during or arising out of any negligent act, error, or omission of the contractor, its officers, agents, servants and employees or sub-contractors/sub-consultants.

**Termination** - The clauses below state general provisions for contract termination. **Additional provisions specific to a particular contract shall apply on a case-by-case basis.**

- a) **Termination for Convenience** - CATA may terminate this contract, in whole or in part, at any time by giving the Contractor thirty (30) calendar days written notice, via certified mail. CATA shall be liable only for payment to the Contractor for its allowable costs, including contract close-out costs, profit, and where applicable, proportional fees as fixed and determined by CATA, for work performed or for services rendered or for items delivered, up to the time of termination. The Contractor shall promptly submit to CATA a termination claim for its costs and the parties shall negotiate the termination settlement to be paid the Contractor. The Contractor shall account for any property in its possession paid for from funds received from CATA, belonging to CATA or supplied to the Contractor by CATA, and shall dispose of such property in the manner CATA directs.
- b) **Termination for Default, Breach or Cause** - If the Contractor fails to deliver supplies in accordance with the specifications or delivery schedule of the contract, or fails to perform services as required by the contract, or if fails to comply with any other provisions of the contract, CATA may terminate the contract immediately for default upon written notice to the Contractor, via certified mail, setting forth the manner in which the Contractor is in default. In such cases, the Contractor will only be paid the contract price for supplies delivered and accepted, or services performed, in accordance with contract requirements.

If CATA later determines that the Contractor had an excusable reason for not performing, such as a strike, fire, flood, or other events not the fault of or beyond the control of the Contractor, CATA may establish a new delivery or performance schedule and may allow the Contractor to continue work or may treat the termination as a termination for convenience. Further, if CATA later determines that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of CATA.

In the case of termination for cause or breach or default of any terms, covenants, or conditions of the contract, CATA may, at its sole discretion, allow the Contractor 10 calendar days from the date of the Contractor's receipt of CATA's notice of said breach or default in which to cure the defect. If Contractor fails to remedy the breach or default to CATA's satisfaction within the 10 day period, CATA shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination shall not in any way preclude CATA from also pursuing all available remedies against Contractor and its sureties for said breach or default.

Should CATA elect to waive its remedies for a breach by Contractor of any covenant, term or condition of the Contract, CATA's waiver shall not limit its remedies for a succeeding breach of that or any other term, covenant, or condition of this Contract

**Contract Compliance** - Any proposed change in this Contract shall be submitted to CATA for its prior approval. All work must be in strict compliance with the requirements and provisions of the specifications included herein. Any deviations, exceptions, substitutions, alternates, or conditional qualifications will not be accepted without prior written approval of CATA and invoices for any such work will be rejected. The price quoted for the work shall not be revised unless CATA approves in writing a change in the scope of work included in the original contract. The Contractor will not be allowed to take advantage of any errors or omissions in the contract, attached specifications, or work requirements. Full instructions to correct errors or omissions will be given to the Contractor once called to the attention of CATA.

**Interest of Public Officials** - No member, officer or employee of CATA or of any of the local sponsoring public bodies during his/her tenure, or for one (1) year thereafter, shall have any interest, direct or indirect, in this Contract or the proceeds thereof.

**Energy Efficiency** - Vendors/Contractors shall recognize and comply with mandatory standards and policies relating to energy efficiency contained in State energy conservation plans issued in compliance with the Energy Policy and Conservation Act (42U.S.C - 6321 et seq).

**Safety Standards** - For all construction contracts, the Contractor shall comply with Section 107 of the Contract Work Hour and Safety Standards Act and Department of Labor regulations entitled "Safety and Health Regulations for Construction," 29 CFR 1926, which provide that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health and safety as determined under construction and health standards promulgated by the Secretary of Labor.

**Assignment** - The Contractor shall not assign, transfer, convey, subcontract or otherwise dispose of all or any of its right, title, interest or responsibility of this Contract without the prior written consent of CATA.

**Audit and Inspection** - The Contractor agrees, with respect to any contract awarded on any basis other than competitive bidding procedure, to permit duly authorized representatives of CATA or the Commonwealth of Pennsylvania, to inspect all work, materials, payrolls and other data and records involving the contract, and to audit the books, records and accounts involving that contract.

**Record Retention** -The Contractor agrees to maintain all books, records and accounts involving the contract for a period of three (3) years from the date of audit or contract closeout, whichever is longer.

**Title VI of the Civil Rights Act of 1964** - The Contractor shall comply with all requirements of Title VI of the Civil Rights Act of 1964, 42 U.S.C 2000d and U.S. Department of Transportation regulations entitled "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation," 49C.F.R.Part 21.

**Severability** - If any provision of this Contract is held invalid, the remainder of this Contract shall not be affected thereby if such remainder would then continue to conform to the terms and requirements of applicable law.

**Notice of State Requirements** - In the performance of its obligations pursuant to this Agreement, the Contractor agrees to comply with all applicable provisions of State and local laws, regulations, and directives. The Contractor agrees that applicable laws, regulations, policies, and related administrative practices in force and made applicable to this Contract on the date of execution may be modified from time to time, and that the most recent of such provisions will govern administration of this Contract at any particular time, unless there is sufficient evidence in the Contract of a contrary intent. Any new laws, regulations, policies and administrative practices established after the date of execution and thereafter will be applied to this Contract. All limits or standards set forth in this Contract to be observed in its performance are minimum requirements.

**Non-Discrimination** - See Appendix A: Non-Discrimination Clauses.

**Pennsylvania Steel Products Procurement Act Requirements -**

**The contractor shall include these provisions of the Steel Products Procurement Act in every subcontract and supply contract so the provisions of the act shall be binding upon each subcontractor and supplier.**

In the performance of any contract awarded pursuant to this invitation to bid, the contractor, subcontractors, materialmen, or suppliers shall use only steel products, rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer, or other steel-making process. Steel products include not only cast iron products, but also machinery and equipment listed in United States Department of Commerce Standard Industrial Classifications 25 (furniture and fixtures), 35 (machinery, except electrical), and 37 (transportation equipment), and made of, fabricated from, or containing steel components. If a product contains both foreign and United States steel, it shall be determined to be a United States steel product only if at least 75 percent of the cost of the articles, materials, and supplies have been mined, produced, or manufactured, as the case may be, in the United States. Transportation equipment shall be determined to be a United States steel product only if it complies with Section 165 of Public Law 97-424 (96 Stat. 2136).

When unidentified steel products are supplied under a contract, before any payment will be made, the contractor must provide documentation including, but not limited to, invoices, bills of lading, and mill certification that the steel was melted and manufactured in the United States. If a steel product is identifiable from its face, the contractor must submit certification which satisfies the using agency that the contractor has fully complied with this provision. The department shall not provide for or make any payments to any person who has not complied with the act. Any such payments made to any person by the department which should not have been made as a result of the act shall be recoverable directly from the contractor, subcontractor, manufacturer, or supplier who did not comply with the act.

In addition to the withholding of payments, any person who willfully violates any of the provisions of the act shall be prohibited from submitting any bids to any public agency for a period of five years from the date of the determination that a violation has occurred. In the event the person who violates the provisions of the act is a subcontractor, manufacturer, or supplier, such person shall be prohibited from performing any work or supplying any materials to a public agency for a period of five years from the date of the determination that a violation has occurred.

**Trade Practices Act** - In accordance with the Trade Practices Act of July 23, 1968, P.L. 686 (71 P.S. Section 773.101 et seq.), the contractor cannot and shall not use or permit to be used in the work any aluminum or steel products made in a foreign country which is listed below as a foreign country which discriminates against aluminum or steel products manufactured in Pennsylvania. The countries of Brazil, South Korea, Spain, and Argentina have been found to discriminate against certain products manufactured in Pennsylvania. Therefore, the purchase or use of those countries' products, as listed below, is not permitted:

- a. Brazil: Welded carbon steel pipes and tubes; carbon steel wire rod; tool steel; certain stainless steel products including hot-rolled stainless steel bar; stainless steel wire rod and cold-formed stainless steel bar; prestressed concrete steel wire strand; hot-rolled carbon steel plate in coil; hot-rolled carbon steel sheet; and cold-rolled carbon steel sheet.
- b. Spain: Certain stainless steel products including stainless steel wire rod, hot-rolled stainless steel bars, cold-formed stainless steel bars; prestressed concrete steel wire strand; and certain steel products including hot-rolled steel plate, cold-rolled carbon steel plate, carbon steel structural shapes, galvanized carbon steel sheet, hot-rolled carbon steel bars, and cold-formed carbon steel bars.
- c. South Korea: Welded carbon steel pipes and tubes; hot-rolled carbon steel plate; hot-rolled carbon steel sheet; and galvanized steel sheet.
- d. Argentina: Carbon steel wire rod and cold-rolled carbon steel sheet.

Penalties for violation of this paragraph may be found in the Trade Practices Act, which penalties include becoming ineligible for public works contracts for a period of three years.

This provision does not, in any way, relieve the contractor of responsibility to comply with those provisions of this Invitation to Bid which prohibit the use of foreign-made steel and cast iron products.

**Public Works Contractor's Bond Law of 1967** -

Prior to the award of any contract, the contractor to be awarded must furnish the following bonds which shall become binding upon the award of the contract to the contractor: (See Attachment 1)

- 1) A performance bond at 100 percent of the contract amount, conditioned upon the faithful performance of the contract in accordance with the plans, specifications, and conditions of the contract. Such bond shall be solely for the protection of the contracting body which awarded the contract.

2) A payment bond at 100 percent of the contract amount. Such bond shall be solely for the protection of claimants supplying labor or materials to the prime contractor to whom the contract was awarded, or to any of his subcontractors, in the prosecution of the work provided for in such contract and shall be conditioned for the prompt payment of all such material furnished or labor supplied or performed in the prosecution of the work. "Labor or materials" shall include public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site.

**Resident Labor Requirement** - All laborers and mechanics employed by the contractor for the work to be performed under this contract shall have been residents of the Commonwealth for at least 90 days prior to their employment. Failure to keep and comply with this provision shall be sufficient legal reason to refuse payment of the contract price to the contractor.

**Pennsylvania Prevailing Wage Act** - The contract with the awarded contractor is subject to the provisions, duties, obligations, remedies, and penalties of the *Pennsylvania Prevailing Wage Act*, 43 P.S. Section 165-1 et seq, which is incorporated herein by reference as if fully set forth herein. The general prevailing minimum wage rates as determined by the Secretary of Labor and Industry shall be paid for each craft or classification of all workmen or perform this contract during the term hereof for the locality in which the work is to be performed. (See Appendix B.)

**Contractor Integrity** - Each bidder/proposer is requested to certify to its compliance with the Commonwealth of Pennsylvania's Contractor Integrity clause. (See Attachment 1)

**APPENDIX A**

**COMMONWEALTH NONDISCRIMINATION CLAUSE**

**(All Contracts)**

During the term of this contract, Contractor agrees as follows:

1. Contractor shall not discriminate against any employee, applicant for employment, independent contractor, or any other person because of race, color, religious creed, ancestry, national origin, age, or sex. Contractor shall take affirmative action to insure that applicants are employed, and that employees or agents are treated during employment, without regard to their race, color, religious creed, ancestry, national origin, age, or sex. Such affirmative action shall include, but is not limited to: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training. Contractor shall post in conspicuous places, available to employees, agents, applicants for employment, and other persons, a notice to be provided by the contracting agency setting forth the provisions of this nondiscrimination clause.
2. Contractor shall, in advertisements or requests for employment placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age, or sex.
3. Contractor shall send each labor union or workers' representative with which it has a collective bargaining agreement or other contract or understanding, a notice advising said labor union or workers' representative of its commitment to this nondiscrimination clause. Similar notice shall be sent to every other source of recruitment regularly utilized by Contractor.
4. It shall be no defense to a finding of noncompliance with this nondiscrimination clause that Contractor had delegated some of its employment practices to any union, training program, or other source of recruitment which prevents it from meeting its obligations. However, if the evidence indicates that the Contractor was not on notice of the third-party discrimination or made a good faith effort to correct it, such factor shall be considered in mitigation in determining appropriate sanctions.
5. Where the practices of a union or any training program or other source of recruitment will result in the exclusion of minority group persons, so that Contractor will be unable to meet its obligations under this nondiscrimination clause, Contractor will be unable to meet its obligations under this nondiscrimination clause, contractor shall then nondiscrimination clause of this contract or with any such laws, this contract may be terminated or suspended, in whole or in part, and Contractor may be declared temporarily ineligible for further Commonwealth contracts, and other sanctions may be imposed and remedies invoked.
7. Contractor shall furnish all necessary employment documents and records to, and permit access to its books, records, and accounts by, the contracting agency and the Office of Administration, Bureau of Affirmative Action, for purposes of investigation to ascertain compliance with the provisions of this clause. If Contractor does not possess documents or records reflecting the necessary information requested, it shall furnish such information on reporting forms supplied by the contracting agency or the Bureau of Affirmative Action.
8. Contractor shall actively recruit minority subcontractors or subcontractors with substantial minority representation among their employees.
9. Contractor shall include the provisions of this nondiscrimination clause in every subcontract, so that such provisions will be binding upon each Subcontractor.
10. Contractor obligations under this clause are limited to the Contractor's facilities within Pennsylvania or, where the contract is for purchase of goods manufactured outside of Pennsylvania, the facilities at which such goods are actually produced.

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Typed Name and Title

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## **APPENDIX B**

### **PENNSYLVANIA PREVAILING WAGE DECISION**

**Note: A General Wage Decision is included in all exclusively state funded construction projects (no federal funds are being used) exceeding \$25,000.00 in value.**

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## PREVAILING WAGES PROJECT RATES

**Project Name:** Bus Maintenance, Servicing and Storage Facility Gas  
 Detection Project  
**Awarding Agency:** Centre Area Transportation Authority  
**Contract Award Date:** 4/23/2012  
**Serial Number:** 12-00230  
**Project Classification:** Building  
**Determination Date:** 1/18/2012  
**Assigned Field Office:** Altoona  
**Field Office Phone Number:** 814-940-6224  
**Toll Free Phone Number:**

### Centre County

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	6/28/2010		\$30.63	\$20.13	\$50.76
Asbestos & Insulation Workers	6/27/2011		\$31.67	\$21.09	\$52.76
Boilermaker (Commercial, Institutional, and Minor Repair Work)	1/1/2010		\$23.59	\$15.15	\$38.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2011		\$24.22	\$16.02	\$40.24
Boilermakers	1/1/2011		\$37.35	\$28.12	\$65.47
Boilermakers	1/1/2012		\$37.62	\$29.85	\$67.47
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/3/2009		\$28.12	\$14.36	\$42.48
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	10/4/2009		\$28.12	\$14.41	\$42.53
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/2/2010		\$30.05	\$14.45	\$44.50
Carpenters	6/1/2009		\$24.79	\$9.68	\$34.47
Carpenters	6/1/2010		\$25.33	\$10.14	\$35.47
Carpenters	6/1/2011		\$25.85	\$10.61	\$36.46
Carpenters, Soft Floor Layers	6/1/2006		\$23.70	\$8.79	\$32.49
Cement Finishers	5/3/2009		\$26.55	\$13.40	\$39.95
Cement Finishers	5/2/2010		\$26.53	\$14.22	\$40.75
Cement Finishers	5/1/2011		\$27.23	\$14.27	\$41.50
Cement Finishers	4/30/2012		\$27.93	\$14.32	\$42.25

**PREVAILING WAGES PROJECT RATES**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Cement Masons	6/1/2010		\$24.60	\$11.99	\$36.59
Cement Masons	7/1/2010		\$24.60	\$11.99	\$36.59
Cement Masons	7/12/2011		\$24.85	\$12.59	\$37.44
Cement Masons	6/1/2012		\$25.15	\$13.19	\$38.34
Cement Masons	6/1/2013		\$25.45	\$13.84	\$39.29
Dockbuilder, Pile Drivers	1/1/2010		\$29.95	\$12.25	\$42.20
Dockbuilder, Pile Drivers	1/1/2011		\$30.35	\$13.10	\$43.45
Dockbuilder, Pile Drivers	1/1/2012		\$30.85	\$13.70	\$44.55
Dockbuilder, Pile Drivers	1/1/2013		\$31.45	\$14.20	\$45.65
Drywall Finisher	6/1/2009		\$24.45	\$13.59	\$38.04
Drywall Finisher	6/1/2010		\$24.55	\$14.49	\$39.04
Drywall Finisher	6/1/2011		\$25.00	\$15.04	\$40.04
Drywall Finisher	6/1/2012		\$25.70	\$15.34	\$41.04
Electric Lineman	5/1/2009		\$39.54	\$16.03	\$55.57
Electric Lineman	5/31/2010		\$38.00	\$17.73	\$55.73
Electric Lineman	5/30/2011		\$38.88	\$17.96	\$56.84
Electric Lineman	11/28/2011		\$39.78	\$18.20	\$57.98
Electric Lineman	5/28/2012		\$40.70	\$18.45	\$59.15
Electric Lineman	11/26/2012		\$41.63	\$18.70	\$60.33
Electricians & Telecommunications Installation Technician	12/26/2008		\$33.11	\$17.13	\$50.24
Electricians & Telecommunications Installation Technician	12/25/2009		\$35.61	\$17.13	\$52.74
Electricians & Telecommunications Installation Technician	12/24/2010		\$38.01	\$17.13	\$55.14
Electricians & Telecommunications Installation Technician	12/23/2011		\$35.76	\$21.10	\$56.86
Electricians & Telecommunications Installation Technician	12/21/2012		\$37.71	\$21.10	\$58.81
Electricians & Telecommunications Installation Technician	12/21/2013		\$39.71	\$21.10	\$60.81
Elevator Constructor	1/1/2009		\$37.33	\$21.20	\$58.53
Elevator Constructor	1/1/2010		\$38.84	\$22.82	\$61.66
Elevator Constructor	1/1/2011		\$40.33	\$24.44	\$64.77
Elevator Constructor	1/1/2012		\$41.84	\$26.06	\$67.90
Elevator Tender (Use Elevator Apprentice or Constructor)	1/1/2007		\$0.00	\$0.00	\$0.00

**PREVAILING WAGES PROJECT RATES**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Glazier	9/1/2010		\$20.38	\$14.82	\$35.20
Glazier	9/1/2011		\$20.88	\$15.32	\$36.20
Glazier	9/1/2012		\$21.38	\$15.82	\$37.20
Glazier	9/1/2013		\$21.88	\$16.32	\$38.20
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2009		\$24.73	\$20.10	\$44.83
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2010		\$25.11	\$21.40	\$46.51
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2011		\$25.26	\$23.02	\$48.28
Laborers (Class 01 - See notes)	7/1/2009		\$18.05	\$9.19	\$27.24
Laborers (Class 01 - See notes)	7/1/2010		\$18.27	\$10.14	\$28.41
Laborers (Class 02 - See notes)	7/1/2009		\$18.20	\$9.19	\$27.39
Laborers (Class 02 - See notes)	7/1/2010		\$18.42	\$10.14	\$28.56
Laborers (Class 03 - See notes)	7/1/2009		\$18.30	\$9.19	\$27.49
Laborers (Class 03 - See notes)	7/1/2010		\$18.52	\$10.14	\$28.66
Laborers (Class 04 - See notes)	7/1/2009		\$17.05	\$9.19	\$26.24
Laborers (Class 04 - See notes)	7/1/2010		\$17.27	\$10.14	\$27.41
Landscape Laborer	7/1/2009		\$18.25	\$9.05	\$27.30
Landscape Laborer	7/1/2010		\$18.25	\$9.90	\$28.15
Landscape Laborer (Skilled)	7/1/2009		\$18.67	\$9.05	\$27.72
Landscape Laborer (Skilled)	7/1/2010		\$18.67	\$9.90	\$28.57
Landscape Laborer (Tractor Operator)	7/1/2009		\$18.97	\$9.05	\$28.02
Landscape Laborer (Tractor Operator)	7/1/2010		\$18.97	\$9.90	\$28.87
Millwright	6/1/2008		\$32.71	\$14.29	\$47.00
Millwright	6/1/2011		\$34.42	\$15.08	\$49.50
Operators (Class 01 - see notes)	7/1/2009		\$25.47	\$12.63	\$38.10
Operators (Class 01 - see notes)	7/1/2010		\$26.37	\$13.13	\$39.50
Operators (Class 01 - see notes)	7/1/2011		\$26.88	\$13.96	\$40.84
Operators (Class 02 -see notes)	7/1/2009		\$22.79	\$12.63	\$35.42
Operators (Class 02 -see notes)	7/1/2010		\$23.69	\$13.13	\$36.82
Operators (Class 02 -see notes)	7/1/2011		\$24.20	\$13.96	\$38.16
Operators (Class 03 - see notes)	7/1/2009		\$21.24	\$12.63	\$33.87

**PREVAILING WAGES PROJECT RATES**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Operators (Class 03 - see notes)	7/1/2010		\$22.14	\$13.13	\$35.27
Operators (Class 03 - See notes)	7/1/2011		\$22.65	\$13.96	\$36.61
Operators (Class 04 - Chief of Party (Surveying and Layout))	7/1/2009		\$20.84	\$12.63	\$33.47
Operators (Class 04 - Chief of Party (Surveying and Layout))	7/1/2010		\$21.74	\$13.13	\$34.87
Operators (Class 04 - Instrument Person (Surveying & Layout))	7/1/2009		\$19.84	\$12.63	\$32.47
Operators (Class 04 - Instrument Person (Surveying & Layout))	7/1/2010		\$20.74	\$13.13	\$33.87
Operators (Class 04 - Rodman/Chainman (Surveying and Layout))	7/1/2009		\$19.39	\$12.63	\$32.02
Operators (Class 04 - Rodman/Chainman (Surveying and Layout))	7/1/2010		\$20.29	\$13.13	\$33.42
Painters Class 6 (see notes)	6/1/2009		\$24.77	\$12.81	\$37.58
Painters Class 6 (see notes)	6/1/2010		\$25.28	\$13.53	\$38.81
Painters Class 6 (see notes)	6/1/2011		\$25.72	\$14.09	\$39.81
Pile Driver Divers (Building, Heavy, Highway)	1/1/2009		\$43.28	\$12.00	\$55.28
Pile Driver Divers (Building, Heavy, Highway)	1/1/2010		\$44.39	\$12.25	\$56.64
Pile Driver Divers (Building, Heavy, Highway)	1/1/2010		\$44.39	\$12.25	\$56.64
Pile Driver Divers (Building, Heavy, Highway)	1/1/2011		\$45.53	\$13.00	\$58.53
Pile Driver Divers (Building, Heavy, Highway)	1/1/2012		\$46.28	\$13.60	\$59.88
Pile Driver Divers (Building, Heavy, Highway)	1/1/2013		\$47.18	\$14.10	\$61.28
Plasterers	6/1/2008		\$20.97	\$9.64	\$30.61
Plasterers	6/1/2010		\$20.97	\$9.94	\$30.91
Plasterers	6/1/2011		\$21.57	\$9.94	\$31.51
Plumbers	5/1/2011		\$31.92	\$20.56	\$52.48
Plumbers and Steamfitters	5/1/2009		\$30.27	\$18.16	\$48.43
Plumbers and Steamfitters	5/1/2010		\$31.07	\$19.36	\$50.43
Roofers (Composition)	5/1/2009		\$30.00	\$23.10	\$53.10
Roofers (Composition)	5/1/2010		\$30.75	\$24.95	\$55.70
Roofers (Composition)	5/1/2011		\$30.75	\$25.95	\$56.70
Roofers (Shingle, Slate, Tile)	5/1/2011		\$23.75	\$15.62	\$39.37
Roofers (Shingle, Slate, Tiles)	5/1/2009		\$23.25	\$13.62	\$36.87
Sheet Metal Workers	6/1/2009		\$29.56	\$29.12	\$58.68

**PREVAILING WAGES PROJECT RATES**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Sheet Metal Workers	6/1/2010		\$29.59	\$29.69	\$59.28
Sheet Metal Workers	6/1/2011		\$29.59	\$30.44	\$60.03
Sheet Metal Workers	6/1/2012		\$29.59	\$31.44	\$61.03
Sign Makers and Hangars	7/1/2009		\$24.17	\$15.99	\$40.16
Sign Makers and Hangars	5/21/2010		\$24.33	\$16.37	\$40.70
Sprinklerfitters	1/1/2010		\$33.85	\$17.60	\$51.45
Sprinklerfitters	1/1/2011		\$33.35	\$18.45	\$51.80
Sprinklerfitters	4/1/2011		\$34.18	\$18.45	\$52.63
Sprinklerfitters	1/1/2012		\$34.18	\$18.60	\$52.78
Sprinklerfitters	4/1/2012		\$35.21	\$18.65	\$53.86
Sprinklerfitters	1/1/2013		\$35.21	\$18.80	\$54.01
Terrazzo Finisher	5/1/2009		\$26.54	\$14.37	\$40.91
Terrazzo Finisher	5/1/2010		\$27.89	\$14.42	\$42.31
Terrazzo Finisher	5/1/2011		\$28.14	\$14.42	\$42.56
Terrazzo Setter	5/1/2009		\$25.86	\$17.27	\$43.13
Terrazzo Setter	5/1/2010		\$27.21	\$17.32	\$44.53
Terrazzo Setter	5/1/2011		\$27.46	\$17.32	\$44.78
Tile & Marble Finisher	5/1/2008		\$20.37	\$11.85	\$32.22
Tile & Marble Finisher	5/1/2009		\$21.48	\$12.39	\$33.87
Tile & Marble Finisher	5/1/2010		\$22.23	\$12.52	\$34.75
Tile & Marble Finisher	5/1/2011		\$23.18	\$12.52	\$35.70
Tile & Marble Layer	5/1/2008		\$23.27	\$13.09	\$36.36
Tile & Marble Layer	5/1/2009		\$24.20	\$13.81	\$38.01
Tile & Marble Layer	5/1/2010		\$24.95	\$13.81	\$38.76
Tile & Marble Layer	5/1/2011		\$25.90	\$13.81	\$39.71
Tilesetters & Marble Masons	1/1/2010		\$29.95	\$12.25	\$42.20
Tilesetters & Marble Masons	1/1/2010		\$29.95	\$12.25	\$42.20
Tilesetters & Marble Masons	5/1/2010		\$24.95	\$13.94	\$38.89
Tilesetters & Marble Masons	5/1/2010		\$24.95	\$13.94	\$38.89
Tilesetters & Marble Masons	1/1/2011		\$30.35	\$13.00	\$43.35
Tilesetters & Marble Masons	1/1/2011		\$30.35	\$13.00	\$43.35

**PREVAILING WAGES PROJECT RATES**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Tilesetters & Marble Masons	5/1/2011		\$25.90	\$13.94	\$39.84
Tilesetters & Marble Masons	5/1/2011		\$25.90	\$13.94	\$39.84
Tilesetters & Marble Masons	1/1/2012		\$30.85	\$13.60	\$44.45
Tilesetters & Marble Masons	1/1/2012		\$30.85	\$13.60	\$44.45
Tilesetters & Marble Masons	1/1/2013		\$31.45	\$14.10	\$45.55
Tilesetters & Marble Masons	1/1/2013		\$31.45	\$14.10	\$45.55
Truckdriver class 1(see notes)	1/1/2009		\$24.23	\$11.44	\$35.67
Truckdriver class 1(see notes)	1/1/2010		\$24.98	\$12.04	\$37.02
Truckdriver class 1(see notes)	1/1/2011		\$25.48	\$12.79	\$38.27
Truckdriver class 1(see notes)	1/1/2012		\$25.88	\$13.49	\$39.37
Truckdriver class 1(see notes)	1/1/2013		\$26.25	\$14.22	\$40.47
Truckdriver class 2 (see notes)	1/1/2009		\$24.38	\$11.51	\$35.89
Truckdriver class 2 (see notes)	1/1/2010		\$25.13	\$12.11	\$37.24
Truckdriver class 2 (see notes)	1/1/2011		\$25.64	\$12.85	\$38.49
Truckdriver class 2 (see notes)	1/1/2012		\$26.02	\$13.57	\$39.59
Truckdriver class 2 (see notes)	1/1/2013		\$26.40	\$14.29	\$40.69
Truckdriver class 3 (see notes)	1/1/2009		\$24.91	\$11.75	\$36.66
Truckdriver class 3 (see notes)	1/1/2010		\$25.64	\$12.37	\$38.01
Truckdriver class 3 (see notes)	1/1/2011		\$26.15	\$13.11	\$39.26
Truckdriver class 3 (see notes)	1/1/2012		\$26.53	\$13.83	\$40.36
Truckdriver class 3 (see notes)	1/1/2013		\$26.90	\$14.56	\$41.46

**PREVAILING WAGES PROJECT RATES**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Carpenter Welder	1/1/2009		\$28.23	\$12.16	\$40.39
Carpenter Welder	1/1/2010		\$29.18	\$12.56	\$41.74
Carpenter Welder	1/1/2011		\$29.18	\$13.57	\$42.75
Carpenter Welder	1/1/2012		\$29.45	\$14.40	\$43.85
Carpenter Welder	1/1/2013		\$29.83	\$15.12	\$44.95
Carpenters	1/1/2009		\$27.53	\$12.16	\$39.69
Carpenters	1/1/2010		\$28.48	\$12.56	\$41.04
Carpenters	1/1/2011		\$28.47	\$13.57	\$42.04
Carpenters	1/1/2012		\$28.74	\$14.40	\$43.14
Carpenters	1/1/2013		\$29.12	\$15.12	\$44.24
Cement Finishers	1/1/2009		\$26.72	\$12.97	\$39.69
Cement Finishers	1/1/2010		\$27.62	\$13.42	\$41.04
Cement Finishers	1/1/2011		\$28.02	\$14.27	\$42.29
Cement Finishers	1/1/2012		\$28.22	\$15.17	\$43.39
Cement Finishers	1/1/2013		\$28.60	\$15.89	\$44.49
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2009		\$24.73	\$20.10	\$44.83
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2010		\$25.11	\$21.40	\$46.51
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2011		\$25.26	\$23.02	\$48.28
Laborers (Class 01 - See notes)	1/1/2009		\$23.20	\$12.65	\$35.85
Laborers (Class 01 - See notes)	1/1/2010		\$23.65	\$13.55	\$37.20
Laborers (Class 01 - See notes)	1/1/2011		\$23.89	\$14.56	\$38.45
Laborers (Class 01 - See notes)	1/1/2012		\$23.97	\$15.58	\$39.55
Laborers (Class 01 - See notes)	1/1/2013		\$24.03	\$16.62	\$40.65
Laborers (Class 02 - See notes)	1/1/2009		\$23.36	\$12.65	\$36.01
Laborers (Class 02 - See notes)	1/1/2010		\$23.81	\$13.55	\$37.36
Laborers (Class 02 - See notes)	1/1/2011		\$24.05	\$14.56	\$38.61
Laborers (Class 02 - See notes)	1/1/2012		\$24.13	\$15.58	\$39.71
Laborers (Class 02 - See notes)	1/1/2013		\$24.19	\$16.62	\$40.81
Laborers (Class 03 - See notes)	1/1/2009		\$23.85	\$12.65	\$36.50
Laborers (Class 03 - See notes)	1/1/2010		\$24.30	\$13.55	\$37.85

**PREVAILING WAGES PROJECT RATES**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Laborers (Class 03 - See notes)	1/1/2011		\$24.54	\$14.56	\$39.10
Laborers (Class 03 - See notes)	1/1/2012		\$24.62	\$15.58	\$40.20
Laborers (Class 03 - See notes)	1/1/2013		\$24.68	\$16.62	\$41.30
Laborers (Class 04 - See notes)	1/1/2009		\$24.30	\$12.65	\$36.95
Laborers (Class 04 - See notes)	1/1/2010		\$24.75	\$13.55	\$38.30
Laborers (Class 04 - See notes)	1/1/2011		\$24.99	\$14.56	\$39.55
Laborers (Class 04 - See notes)	1/1/2012		\$25.07	\$15.58	\$40.65
Laborers (Class 04 - See notes)	1/1/2013		\$25.13	\$16.62	\$41.75
Laborers (Class 05 - See notes)	1/1/2009		\$24.71	\$12.65	\$37.36
Laborers (Class 05 - See notes)	1/1/2010		\$25.16	\$13.55	\$38.71
Laborers (Class 05 - See notes)	1/1/2011		\$25.40	\$14.56	\$39.96
Laborers (Class 05 - See notes)	1/1/2012		\$25.48	\$15.58	\$41.06
Laborers (Class 05 - See notes)	1/1/2013		\$25.54	\$16.62	\$42.16
Laborers (Class 06 - See notes)	1/1/2009		\$21.55	\$12.65	\$34.20
Laborers (Class 06 - See notes)	1/1/2010		\$22.00	\$13.55	\$35.55
Laborers (Class 06 - See notes)	1/1/2011		\$22.24	\$14.56	\$36.80
Laborers (Class 06 - See notes)	1/1/2012		\$22.32	\$15.58	\$37.90
Laborers (Class 06 - See notes)	1/1/2013		\$22.38	\$16.62	\$39.00
Laborers (Class 07 - See notes)	1/1/2009		\$24.20	\$12.65	\$36.85
Laborers (Class 07 - See notes)	1/1/2010		\$24.65	\$13.55	\$38.20
Laborers (Class 07 - See notes)	1/1/2011		\$24.89	\$14.56	\$39.45
Laborers (Class 07 - See notes)	1/1/2012		\$24.97	\$15.58	\$40.55
Laborers (Class 07 - See notes)	1/1/2013		\$25.03	\$16.62	\$41.65
Laborers (Class 08 - See notes)	1/1/2009		\$25.70	\$12.65	\$38.35
Laborers (Class 08 - See notes)	1/1/2010		\$26.15	\$13.55	\$39.70
Laborers (Class 08 - See notes)	1/1/2011		\$26.39	\$14.56	\$40.95
Laborers (Class 08 - See notes)	1/1/2012		\$26.47	\$15.58	\$42.05
Laborers (Class 08 - See notes)	1/1/2013		\$26.53	\$16.62	\$43.15
Operators (Class 01 - see notes)	1/1/2009		\$26.38	\$14.44	\$40.82
Operators (Class 01 - see notes)	1/1/2010		\$27.18	\$14.99	\$42.17
Operators (Class 01 - see notes)	1/1/2011		\$27.68	\$15.74	\$43.42

**PREVAILING WAGES PROJECT RATES**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Operators (Class 01 - see notes)	1/1/2012		\$28.08	\$16.44	\$44.52
Operators (Class 01 - see notes)	1/1/2013		\$28.48	\$17.14	\$45.62
Operators (Class 02 -see notes)	1/1/2009		\$26.12	\$14.44	\$40.56
Operators (Class 02 -see notes)	1/1/2010		\$26.92	\$14.99	\$41.91
Operators (Class 02 -see notes)	1/1/2011		\$27.42	\$15.74	\$43.16
Operators (Class 02 -see notes)	1/1/2012		\$27.82	\$16.44	\$44.26
Operators (Class 02 -see notes)	1/1/2013		\$28.22	\$17.14	\$45.36
Operators (Class 03 - See notes)	1/1/2009		\$22.47	\$14.44	\$36.91
Operators (Class 03 - See notes)	1/1/2010		\$23.27	\$14.99	\$38.26
Operators (Class 03 - See notes)	1/1/2011		\$23.77	\$15.74	\$39.51
Operators (Class 03 - see notes)	1/1/2012		\$24.17	\$16.44	\$40.61
Operators (Class 03 - See notes)	1/1/2013		\$24.57	\$17.14	\$41.71
Operators (Class 03)	1/1/2011		\$23.77	\$15.74	\$39.51
Operators (Class 04 - See notes)	1/1/2009		\$22.01	\$14.44	\$36.45
Operators (Class 04 - See notes)	1/1/2010		\$22.81	\$14.99	\$37.80
Operators (Class 04 - See notes)	1/1/2011		\$23.31	\$15.74	\$39.05
Operators (Class 04 - See notes)	1/1/2012		\$23.71	\$16.44	\$40.15
Operators (Class 04 - See notes)	1/1/2013		\$24.11	\$17.14	\$41.25
Operators (Class 05 - See notes)	1/1/2009		\$21.76	\$14.44	\$36.20
Operators (Class 05 - See notes)	1/1/2010		\$22.56	\$14.99	\$37.55
Operators (Class 05 - See notes)	1/1/2011		\$23.06	\$15.74	\$38.80
Operators (Class 05 - See notes)	1/1/2012		\$23.46	\$16.44	\$39.90
Operators (Class 05 - See notes)	1/1/2013		\$23.86	\$17.14	\$41.00
Painters Class 1 (see notes)	6/1/2009		\$27.24	\$12.81	\$40.05
Painters Class 1 (see notes)	6/1/2010		\$27.84	\$13.53	\$41.37
Painters Class 1 (see notes)	6/1/2010		\$27.84	\$15.03	\$42.87
Painters Class 2 (see notes)	6/1/2009		\$27.77	\$12.81	\$40.58
Painters Class 2 (see notes)	6/1/2010		\$28.38	\$13.53	\$41.91
Painters Class 2 (see notes)	6/1/2010		\$28.38	\$15.03	\$43.41
Painters Class 3 (see notes)	6/1/2009		\$29.81	\$12.81	\$42.62
Painters Class 3 (see notes)	6/1/2010		\$30.48	\$13.53	\$44.01

## PREVAILING WAGES PROJECT RATES

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Painters Class 3 (see notes)	6/1/2010		\$30.48	\$15.28	\$45.76
Painters Class 4 (see notes)	6/1/2009		\$23.79	\$12.81	\$36.60
Painters Class 4 (see notes)	6/1/2010		\$24.38	\$13.53	\$37.91
Painters Class 4 (see notes)	6/1/2010		\$24.38	\$14.93	\$39.31
Painters Class 5 (see notes)	6/1/2009		\$19.28	\$12.81	\$32.09
Painters Class 5 (see notes)	6/1/2010		\$19.81	\$13.53	\$33.34
Painters Class 5 (see notes)	6/1/2010		\$19.81	\$14.67	\$34.48
Piledrivers	1/1/2009		\$28.85	\$12.00	\$40.85
Piledrivers	1/1/2010		\$29.95	\$12.25	\$42.20
Piledrivers	1/1/2011		\$30.35	\$13.10	\$43.45
Piledrivers	1/1/2012		\$30.85	\$13.70	\$44.55
Piledrivers	1/1/2013		\$31.45	\$14.20	\$45.65
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2010		\$30.27	\$26.09	\$56.36

**Notes:**

If you can not find a classification under Heavy/Highway please refer to the Building classifications.

For further information on construction types review the ["Notes as Referenced in Predeterminations"](#) on the Labor and Industry Website. Go to [www.dli.state.pa.us](http://www.dli.state.pa.us), scroll down to the picture labeled "Labor Law Compliance" and click the picture. Then scroll down on the left menu and click on the "Prevailing Wage" link.

## APPENDIX C

### PROTEST PROCEDURES

1. The protest procedures set forth herein must be followed to protest any aspect of this procurement, including protests of the conditions and specifications issued through this Invitation. Failure to comply with these protest procedures may result in disallowance of a protest.
2. Protests may only be filed by an Interested Party, defined as an entity or individual who is an actual or prospective bidder/proposer with respect to this Invitation and whose direct economic interest would be affected by award of the contract or by failure to award the contract. CATA will not accept or consider protests from entities or individuals who are not Interested Parties.
3. Protests must be filed in writing and submitted to: General Manager, Centre Area Transportation Authority, 2081 West Whitehall Road, State College, PA 16801. Verbal protests will not be considered or accepted by CATA. In all instances, information regarding the protest will be disclosed to the Pennsylvania Department of Transportation, Bureau of Public Transportation (BPT) upon receipt of the protest by CATA.
4. The protest must be clearly labeled or identified as a protest being submitted under these protest procedures and must identify the particular procurement involved. The protest must contain, at a minimum, the following information:
  - (a) Name and address of the Protestor
  - (b) A complete statement of each and every basis upon which the Protestor is relying in protesting the procurement proceeding, including any supporting documentation, and the specific requirements of federal or state law or CATA procurement proceedings with which CATA has failed to comply with respect to this Invitation
  - (c) A statement as to the date upon which the matter forming the basis of the protest was disclosed or discovered
  - (d) A clear statement of the relief and/or corrective action sought by the Protestor. Failure to identify the protest clearly or failure to include the required information listed above may result in rejection or disallowance of the protest. CATA, at its sole discretion, may choose to consider a written protest that is incomplete in some respect by notifying the protestor in writing of the deficiencies contained in the protest and of the specified time period allowed for correction of those deficiencies. The protestor's failure to supply additional information requested by CATA within the specified time period shall result in rejection or disallowance of the protest.
5. A protestor may amend or supplement the initial protest at any time prior to the issuance of a written decision on the protest by the Protest Review Board. No amendment or supplement will be permitted once the Protest Review Board has issued a written decision.
6. All amendments or supplements to a protest must be filed in writing with the General Manager of CATA. Verbal amendments or supplements will not be considered or accepted by CATA.
7. Any amendment or supplement to a protest must be directly related to matters originally raised in the initial protest. Amendments or supplements which raise matters not directly related to those originally raised in the initial protest shall be considered a new protest to be addressed separately under these protest procedures. The determination as to whether amendments or supplements relate directly to matters raised in the initial protest shall lie solely with CATA.

8. Protests must be filed by actual delivery of the complete protest to the office of the General Manager of CATA. Protests shall not be considered to have been filed until actual receipt of the protest by CATA. Failure to file a protest within the time frames specified below due to delays in delivery by the U.S. Postal Service or private delivery services shall not be considered good cause for such failure and shall not warrant a waiver of filing deadlines.
  - (a) Matters disclosed in initial bid/proposal package - Protests based on matters disclosed in the initial bid/proposal package must be filed not later than twenty-one (21) calendar days prior to the date on which bids/proposals are to be opened or seven (7) calendar days after the issuance of the initial bid/proposal package, whichever is later. A matter is considered to have been disclosed under this paragraph if any of the following apply:

The matter is explicitly stated in the bid/proposal package or; the matter could reasonably be inferred by a reasonable person from the bid/proposal package taken as a whole and in light of the circumstances surrounding the procurement proceeding, or; the bid/proposal package contains or omits information which, taken as a whole and in light of the circumstances surrounding the procurement proceeding, would put a reasonable person on notice of the matter, or which would cause a reasonable person to make inquiry concerning the matter.
  - (b) Matters disclosed subsequent to the issuance of the initial bid/proposal package but prior to bid opening - Protests based upon matters which were not disclosed in the initial bid/proposal package must be filed not later than twenty-one (21) calendar days prior to the actual opening of the bids/proposals or within seven (7) calendar days after the matter upon which the protest is based is disclosed, whichever is later.
  - (c) Matters disclosed after opening of bids/proposals - Protests based upon matters which are disclosed at or after the opening of bids/proposals, including the award of a contract by CATA, must be filed not later than five (5) calendar days after the opening of bids/proposals or after the matter upon which the protest is based is disclosed or has taken place.
9. Failure to comply with filing requirements set forth above may result in rejection of disallowance of the protest. CATA may, at its sole discretion, waive or alter any of these requirements if CATA determines that the Protestor has substantially complied with the requirements of the protest procedures and that the waiver will not unduly impair CATA's procurement proceedings, or if CATA determines that the Protestor's failure to comply with filing requirements is for good cause based on a compelling reason or circumstance beyond the Protestor's control and the waiver will not unduly impair CATA's procurement proceedings, or if CATA determines that a waiver is appropriate and necessary for reasons of public policy or to avoid manifest inequity.
10. CATA may impose any such conditions on any waiver as it determines are necessary and appropriate. Such conditions are not subject to protest and may include, but are not limited to, a requirement that the Protestor cure any defects in the form or content of its protest.
11. Any bidder/proposer wishing to protest the awarding of a contract by CATA to the apparent most responsive and responsible bidder/proposer will be required to furnish, at its own expense, a protest bond in the amount of \$1,000, in the form of either a cashier's check or certified check made payable to the Centre Area Transportation Authority, before CATA will consider the protest. This protest bond will serve as a guarantee by the bidder/proposer of the validity and accuracy of the protest. Failure to provide this bond may result in CATA's denial of the bidder's/proposers protest. If the Protest Review Board denies the bidder's/proposer's protest, the bond will be used by CATA to recover costs and damages incurred because of the protest and the resulting delay in the delivery of the items to be procured.

12. All properly filed protests shall be reviewed by a Protest Review Board consisting of CATA's General Manager or designee, Chairman of CATA's Board of Directors or designee, and CATA's Legal Counsel.
13. The Protest Review Board shall issue a written decision denying or upholding the protest within seven (7) calendar days after the filing of the protest. Such decision shall respond in detail to each substantive issue raised by the Protestor and shall clearly set forth what relief, if any, is being granted to the Protestor. The Protestor will be notified by telephone of the substance of the decision, with a copy of the written decision mailed to the Protestor by certified or registered mail. The Protest Review Board's decision shall be final.
14. As a general rule, protests shall be considered solely on the basis of the written materials submitted by the Protestor. Upon written request of the Protestor, CATA may, at its sole discretion, permit the Protestor to make a verbal presentation to the Protest Review Board, subject to any restrictions CATA may deem appropriate.
15. The Protest Review Board may, at its sole discretion, schedule an informal conference with the Protestor to review the merits of a protest. Any such conference will be scheduled so as not to delay the issuance of a decision on the protest within the time frames set forth above, except as expressly allowed by CATA.
16. The Protest Review Board shall have the authority to grant such relief, or direct that such actions be taken, as are necessary and appropriate to remedy any defect, substantive or procedural, which may have occurred in this procurement.
17. The Protest Review Board shall be limited to determining whether this procurement proceeding complies with applicable federal and state law and the requirements of the Invitation. The scope of review shall not extend to the advisability of a particular decision nor to matters which are committed by law to the discretion and judgment of the CATA Board of Directors.
18. The Protestor may request that the BPT review a protest only in cases where it is alleged that CATA failed to have written protest procedures, failed to adhere to those procedures, or failed to review a protest. An appeal to the BPT must be received by the cognizant BPT regional or headquarters office within five (5) working days of the date the protester knew or should have known of the violation.
19. A written request by a Protestor for reconsideration of the decision issued by the Protest Review Board will be considered only if the request alleges an error of federal/state law or regulation or documents the existence of substantive information that was not previously known.
20. All potential contractors will be advised of a pending protest which has been filed prior to the contract award. CATA will not proceed with any procurement when a protest or appeal is pending except as noted below:
  - (a) For protests filed prior to award, CATA shall not make an award for five (5) calendar days following the issuance of the decision by the Protest Review Board, or, if a Protestor has filed a protest with the BPT, during the pendency of that protest, unless CATA determines that the items to be procured are urgently required or that delivery or performance will be unduly delayed by failure to make the award properly or that failure to make the award properly will otherwise cause undue harm to CATA or the Commonwealth of Pennsylvania. In such cases, CATA will notify the BPT prior to making award.

21. CATA protest procedures provide an administrative remedy to Interested Parties who wish to protest any aspect of this procurement proceeding. The protest procedures do not limit or otherwise restrict any other remedies that an Interested Party may have at law or in equity, except to the extent that the failure of an Interested Party to follow these procedures may be considered a failure to exhaust administrative remedies.

**ATTACHMENT 1  
TO  
INSTRUCTIONS TO BIDDERS**

**BID AND BOND FORMS**

- Form of Bid
- Bid Bond
- Bidder Non-Collusion Statement
- Certification Regarding Debarment
- Certification Regarding Lobbying
- Performance and Payment Bond
- Performance and Payment Bond Irrevocable Letter of Credit
- Contractor Integrity

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FORM OF BID

BUS MAINTENANCE, SERVICING AND STORAGE FACILITY EXPANSION

GAS DETECTION PROJECT

CONTRACT NO. 1

FROM:

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

TO: Centre Area Transportation Authority  
2081 W. Whitehall Road  
State College, PA 16801

Having carefully examined the conditions affecting the cost of the Work and the Bid Documents entitled GAS DETECTION PROJECT, CONTRACT NO. 1 for Centre Area Transportation Authority, the undersigned agrees to all the terms and conditions set forth in the Bid Documents.

<u>Pay Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>
15950-1	Gas Detection System	1	LS	_____	_____
Add Alternate 1					
15950-1	Auto Calibration System	1	LS	_____	_____
	Total Bid	1	LS	_____	_____

**Total Bid (Written Amount):**

\_\_\_\_\_ **DOLLARS \$** \_\_\_\_\_

Security in the sum of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_) in the form of \_\_\_\_\_ is submitted herewith as Bid Guaranty.

This bid is firm for at least sixty (60) days from the closing date for the submission of bids.

The undersigned hereby acknowledges receipt of the following Addenda:

No. \_\_\_\_\_  
No. \_\_\_\_\_  
No. \_\_\_\_\_

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

Alterations and/or changes in any part of this Bid or failure to furnish a complete Bid and all information required for the Bid will be reason for rejection.

**NO BID PRICE WILL BE CONSIDERED UNLESS THE BID PRICE IS FIRM AND WITHOUT QUALIFICATIONS**

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Telephone Number)

\_\_\_\_\_

\_\_\_\_\_  
(e-mail Address)

\_\_\_\_\_  
(Mailing Address)

\_\_\_\_\_  
(Fax Number)

**(IF A SOLE PROPRIETOR)**

If the executing signature is provided by someone other than the Owner, appropriate additional information **MUST BE SUBMITTED WITH THE BID** to prove that the Owner is bound by the person signing the Bid.

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Handwritten Signature of Owner)

\_\_\_\_\_  
(Name of Owner - TYPED)

**(IF A PARTNERSHIP)**

If the executing signature is provided by someone other than a General Partner, appropriate additional information **MUST BE SUBMITTED WITH THE BID** to prove that the partnership is bound by the person signing the Bid.

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Handwritten Signature of Owner)

\_\_\_\_\_  
(Name of General Partner - TYPED)

**(IF A CORPORATION)**

**If ANY title is used other than the one listed below, appropriate additional information MUST BE BID WITH THE BID to prove that the corporation is bound by the person signing the Bid.**

*President -- Vice President  
Secretary -- Assistant Secretary  
Treasurer -- Assistant Treasurer*

\_\_\_\_\_  
(Name of Corporation)

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

\_\_\_\_\_  
(Name and Title - TYPED)

**(IF A JOINT VENTURE)**

If the Bid is not signed by every member of the joint venture, appropriate additional information MUST BE SUBMITTED WITH THE BID to prove that the joint venture is bound by the person(s) signing the Bid.

Each member that signs the Bid must adhere to the signature requirements for sole proprietors, partnerships or corporations as appropriate.

If there are more than two joint venturers signing the Bid, the additional signatures must be provided on an additional page.

\_\_\_\_\_  
(Name of Joint Venture)

\_\_\_\_\_  
(Name of First Party of Joint Venture)

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

\_\_\_\_\_  
(Name and Title - TYPED)

\_\_\_\_\_  
(Name of Second Party of Joint Venture)

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

\_\_\_\_\_  
(Name and Title – TYPED)

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BID BOND

KNOW ALL MEN BY THESE PRESENTS, That \_\_\_\_\_  
\_\_\_\_\_(Bidder) as PRINCIPAL, and  
\_\_\_\_\_ as SURETY, are held and firmly bound unto Centre Area Transportation  
Authority, hereinafter called Authority, in the penal sum of:

\_\_\_\_\_ DOLLARS,

(\$ \_\_\_\_\_) lawful money of the United States, for the payment of which sum well and truly to  
be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally,  
firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the PRINCIPAL has submitted  
the accompanying Bid dated \_\_\_\_\_ 20\_\_, for the  
BUS MAINTENANCE, SERVICING, AND STORAGE FACILITY EXPANSION – GAS DETECTION  
PROJECT - CONTRACT NO. 1.

NOW, THEREFORE, if the Principal shall not withdraw said Bid within either the appropriate sixty  
(60) day or one-hundred twenty (120) day period after said opening, or as otherwise provided in 73 P.S.  
Section 1602, and shall within the period specified therefore, or if no period be specified, within ten (10)  
days after the prescribed forms are presented to it for signature, enter into a written Contract with  
Authority in accordance with the Bid accepted, and execute and deliver to Authority all bonds and other  
instruments required to be executed and delivered by the Principal in accordance with the Bid  
Documents, or in the event of the withdrawal of said Bid within the period specified or the failure to enter  
into said Contract and to execute and deliver to Authority all bonds and other instruments required to be  
executed and delivered by the Principal in accordance with the Bid Documents within the time specified,  
or if no time is specified, within ten (10) days after the prescribed forms are presented to it for signature,  
if the Principal shall pay Authority the difference between the amount specified in said Bid and the  
amount for which Authority may procure the required work, equipment or supplies, if the latter amount be  
in excess of the former, together with all other loss, damage or expense suffered by Authority thereby,  
then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

Said Surety, for value received, hereby stipulates and agrees that the obligations of said Surety under this Bond shall in no way be impaired or affected by an extension of the time within which said bid may be accepted and said Surety does hereby waive notice of any such extension.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_, the name and corporate seal of each corporate party being hereto affixed and duly signed by its authorized representatives, pursuant to authority of its governing body.

IN PRESENCE OF:

PRINCIPAL

(IF SOLE PROPRIETOR):

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Signature of Proprietor

\_\_\_\_\_  
Business Name and Address

(IF A PARTNERSHIP):

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Signature of General Partner

\_\_\_\_\_  
Business Name and Address

(IF A CORPORATION):

ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
Signature of Authorized Representative  
(Affix Corporate Seal)

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Business Name and Address

SURETY

ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
Signature of Authorized Representative  
(Affix Corporate Seal)

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Business Name and Address

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**THIS DOCUMENT MUST BE NOTARIZED AND RETURNED WITH ALL BIDS.**

**BIDDER NON-COLLUSION STATEMENT**

Bidders/proposers must fill out the appropriate sections of this Certificate and return with bid.

1. If the Bidder is not the parent company, insert below the name and main office address of the parent company. (A parent company is one that owns at least a majority (51%) of the voting rights and/or assets in that company.) If Bidder is the parent company, ignore Section 1.

I, \_\_\_\_\_, \_\_\_\_\_  
(typed name - authorized official) (title)

for \_\_\_\_\_, the Bidder,  
(executing agent)

attest to the proposal on behalf of the Bidder and the parent company if other than the Bidder.

(authorized official - signature)

2. By submission of this Bid/Proposal, each respondent and each person signing on behalf of any respondent certifies and in the case of a joint bid, each party certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
  - a. The prices in this Bid/Proposal have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition as to any other matter relating to such prices with any other bidder or with any other competitor.
  - b. Unless otherwise required by law or this solicitation, the prices which have been included in this Bid/Proposal have not been knowingly disclosed by the Bidder/Respondent and will not knowingly be disclosed by the Bidder/Respondent prior to the bid opening (submission deadline for proposals) to any competitor; and
  - c. No attempt has been made or will be made by the Bidder/Respondent to induce any other person, partnership or corporation to submit or not to submit a Bid/Proposal for the purpose of restricting competition.

\_\_\_\_\_  
Signature

Title

\_\_\_\_\_  
Typed Name

Company

Taken, subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Notary Public in and for the County of \_\_\_\_\_

My commission expires

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**CERTIFICATION REGARDING DEBARMENT, SUSPENSION,  
AND OTHER INELIGIBILITY AND VOLUNTARY EXCLUSION**

1. This certification is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, CATA may, in addition to other remedies available to the Federal Government, pursue available remedies, including suspension and/or debarment.
2. The prospective lower tier participant shall provide immediate written notice to CATA if it learns at any time that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
3. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "persons," "lower tier covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause and certification have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549 (49 CFR Part 29). CATA may be contacted for assistance in obtaining a copy of those regulations.
4. The prospective lower tier participant agrees, by submitting this proposal, that, should the proposed covered transaction be entered into, it shall not knowingly enter into any subcontract with a person or firm who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless so authorized in writing by CATA.
5. The prospective lower tier participant further agrees that it will include the same "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
6. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. A participant may, but is not required to, check the Non-procurement List issued by U.S. General Service Administration.
7. Nothing detailed above shall be construed to require establishment of system of records in order to render in good faith the required certification. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
8. If it is determined that a participant in a covered transaction knowingly entered into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction (except for transactions authorized by CATA, under Paragraph 4 of these instructions), CATA may, in addition to all remedies available to the Federal Government, pursue available remedies including suspension and/or debarment.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -  
Lower Tier Covered Transaction**

The prospective lower tier participant named below, by submission of this proposal, hereby certifies that neither it nor its "principals" [as defined at 49 CFR 29.105(p)] is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Name of Lower Tier Participant \_\_\_\_\_

Authorized Representative  
Title \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

**If the Lower Tier Participant named above is unable to certify to any of the statements in this certification, such participant must attach an explanation to this proposal.**

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**INELIGIBLE CONTRACTOR'S CERTIFICATE**

The \_\_\_\_\_ (name of the third-party contractor) hereby certifies that it **is/is not** (circle one) included on the U.S. Comptroller General's Consolidated List of Persons or Firms Currently Debarred for Violations for Various Public Contracts Incorporating Labor Standards Provisions.

Company Name \_\_\_\_\_

Authorized Representative  
Title \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

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**CERTIFICATION REGARDING LOBBYING**

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

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

If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 USC 1601, et seq.)]

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

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 USC 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Pursuant to 31 USC 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.

The contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the contractor understands and agrees that the provisions of 31 USC 3801(A), *et seq.*, apply to this certification and disclosure, if any.

Signature \_\_\_\_\_ Date \_\_\_\_\_

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

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**BID GUARANTY**

UNLESS THE PROPOSAL IS WITHDRAWN PRIOR TO THE DEADLINE FOR RECEIPT, AS SPECIFIED IN SECTION A, PARAGRAPH 6, THE PROPOSED PRICES SHALL NOT BE WITHDRAWN FOR A MINIMUM OF SIXTY (60) CALENDAR DAYS FROM THE DATE PROPOSALS ARE DUE.

THE PROPOSER AGREES TO ACCEPT AS FULL COMPENSATION FOR EACH ITEM THE UNIT PRICES NAMED THEREFORE IN SCHEDULE OF PRICES PROPOSED, UNLESS THE FINAL PRICE IS NEGOTIATED AND AGREED TO AS SPECIFIED HEREIN.

THE PROPOSER SHALL ACKNOWLEDGE THIS PROPOSAL BY SIGNING AND COMPLETING THE SPACES PROVIDED BELOW.

IF AN INDIVIDUAL, PARTNERSHIP, OR NON-INCORPORATED ORGANIZATION WITNESS:

\_\_\_\_\_  
SIGNATURE OF BIDDER:

\_\_\_\_\_  
BY:

\_\_\_\_\_  
ADDRESS OF BIDDER:

\_\_\_\_\_  
(ATTACH NAMES AND ADDRESSES OF MEMBERS OF THE FIRM)

**IF A CORPORATION**

WITNESS:  
\_\_\_\_\_

BY: \_\_\_\_\_

INCORPORATED UNDER THE LAWS OF THE STATE OF

**CORPORATE SEAL IMPRINT BELOW:**

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That we \_\_\_\_\_ as Surety, are bound to the Centre Area Transportation Authority, as Obligee, hereinafter called CATA, in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) for the administrators, successors and assigns, jointly and severally.

WHEREAS, CONTRACTOR has by written agreement entered into a Contract dated the \_\_\_ day of \_\_\_\_\_, 20\_\_ for \_\_\_\_\_, which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

THE CONDITION OF THIS BOND is that if the CONTRACTOR:

1. Performs the Contract between the CONTRACTOR and CATA for construction/manufacture of \_\_\_\_\_, the Contract being made a part of this Bond by reference, at the times and in the manner prescribed in the Contract; and
2. Promptly makes payments to all claimants, supplying CONTRACTOR with labor, materials, or supplies, used directly or indirectly by CONTRACTOR in the prosecution of the work provided for the CONTRACT; and
3. Pays CATA all losses, damages, expenses, costs and attorneys fees including appellate proceedings, that CATA sustains because of default by CONTRACTOR under the Contract; and
4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract, then this Bond is void; otherwise it remains in full force.

The Surety hereby waives notice of and agrees that any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

Whenever CONTRACTOR shall be, and declared by CATA to be, in default under the Contract, having performed CATA's obligation thereunder, the Surety may promptly remedy the default, or shall promptly

- (1) Complete the CONTRACT in accordance with its terms and conditions; or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible Proposer, or, if CATA so elects, upon determination by CATA and Surety jointly of the lowest responsible Proposer, arrange for a Contract between such Proposer and CATA, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient fund to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract price," as used in this paragraph, shall mean the total amount payable by CATA to CONTRACTOR under the Contract and any amendments thereto, less the amount properly paid by CATA to CONTRACTOR.

**PERFORMANCE AND PAYMENT BOND**

**(Page 2 of 2)**

No right action shall accrue on this bond or for the use of any person or corporation other than CATA named herein and those persons or corporations, or their heirs, executors, administrators or successors.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 20\_\_\_\_

\_\_\_\_\_  
(Name of Corporation)

WITNESSES:

\_\_\_\_\_

BY: \_\_\_\_\_  
(Signature)

BY: \_\_\_\_\_  
(Type Name and Title)

(CORPORATE SEAL)

In the presence of: \_\_\_\_\_

INSURANCE COMPANY: \_\_\_\_\_

BY: \_\_\_\_\_  
Agent and Attorney-in-Fact

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

\_\_\_\_\_  
Telephone No.: \_\_\_\_\_

**PERFORMANCE AND PAYMENT BOND  
IRREVOCABLE LETTER OF CREDIT**

Date of Issue \_\_\_\_\_

Issuing Bank's No. \_\_\_\_\_

Beneficiary:

Centre Area Transportation Authority

Applicant:

Amount: \_\_\_\_\_

in United States Fund

Expires: \_\_\_\_\_

(Date)

Proposal/Contract Number \_\_\_\_\_

We hereby authorize you to draw on \_\_\_\_\_

(Bank, Issuer name)

at \_\_\_\_\_

(branch address)

by order of and for the account of \_\_\_\_\_

(contractor, applicant, customer)

up to an aggregate amount, in United States Funds, of \_\_\_\_\_

available by your draft at sight, accompanied by:

- (1) A signed statement from the General Manager of CATA or his designee, that the drawing is due to default in performance of certain obligations of the part of

\_\_\_\_\_ by and between CATA and \_\_\_\_\_,

(contractor, applicant, customer)

(contractor, applicant, customer)

Pursuant to the Proposal/contract No. \_\_\_\_\_ for \_\_\_\_\_

(name of project)

Drafts must be drawn and negotiated not later than \_\_\_\_\_

(expiration date)

Drafts must bear the clause: "Drawn under Letter of Credit No. \_\_\_\_\_

(number)

of \_\_\_\_\_, dated \_\_\_\_\_.

(Bank name)

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## CONTRACTOR INTEGRITY

\_\_\_\_\_, hereinafter referred to as the Contractor, agrees to and certifies that:

### 1. DEFINITIONS

a. "Confidential information" means information that is not public knowledge, or available to the public on request, disclosure of which would give an unfair, unethical, or illegal advantage to another desiring to contract with the Commonwealth of Pennsylvania or CATA.

b. "Consent" means written permission signed by a duly authorized officer or employee of the Commonwealth or CATA, provided that where the material facts have been disclosed, in writing, by pre-qualification, bid, proposal, or contractual terms, CATA shall be deemed to have consented by virtue of execution of this agreement.

c. "Contractor" means the individual or entity that has entered into this agreement with the Owner, including directors, officers, partners, managers, key employees, and owners of more than five percent (5%) interest.

d. "Financial Interest" means:

(1) Ownership of more than five (5%) percent interest in any business; or

(2) Holding a position as an officer, director, trustee, partner, employee, or the like, or holding any position of management.

e. "Gratuity" means any payment of more than nominal monetary value in the form of cash, travel, entertainment, gifts, meals, lodging, loans., subscriptions, advances, deposits of money, services, employment, or contracts of any kind.

2. The Contractor shall maintain the highest standards of integrity in the performance of this agreement and shall take no action in violation of state or federal laws, regulations, or other requirements that govern contracting with the Commonwealth of Pennsylvania and/or CATA.

3. The Contractor shall not disclose to others any confidential information gained by virtue of this agreement.

4. The Contractor shall not, in connection with this or any other agreement with the Owner or the Commonwealth of Pennsylvania, directly or indirectly, offer, confer, or agree to confer any pecuniary benefit on anyone as consideration for the decision, opinion, recommendation, vote, other exercise of discretion, or violation of a known legal duty by any officer or employee of the Owner or the Commonwealth of Pennsylvania.

5. The Contractor shall not, in connection with this or any other agreement with the Owner or the Commonwealth, directly or indirectly, offer, give, or agree or promise to give to anyone any gratuity for the benefit of or at the direction or request of any officer or employee of CATA or the Commonwealth.

6. Except with the consent of CATA and the Commonwealth, neither the Contractor nor anyone in privity with the Contractor shall accept or agree to accept from, or give or agree to give to, any person, any gratuity from any person in connection with the performance of work under this agreement except as provided therein.

7. Except with the consent of CATA and Commonwealth, the Contractor shall not have a financial interest in any other contractor, subcontractor, or supplier providing services, labor, or material on this project.

8. The Contractor, upon being informed that any violation of these provisions has occurred or may occur, shall immediately notify CATA in writing.

9. The Contractor, by execution of this agreement and by the submission of any bills or invoices for payment pursuant thereto, certifies and represents that the Contractor has not violated any of these provisions.

10. The Contractor shall, upon request of the Office of State Inspector General or County Controller, reasonably and promptly make available to that office and its representatives, for

inspection and copying, all business and financial records of the Contractor of, concerning, and referring to this agreement with CATA or which are otherwise relevant to the enforcement of these provisions.

11. For violation of any of the above provisions, CATA (or Commonwealth, if applicable) may terminate this and any other agreement with the Contractor, claim liquidated damages in an amount equal to the value of anything received in breach of these provisions, claim liquidated damages for all expenses incurred in obtaining another contractor to complete performance hereunder, and debar and suspend the Contractor from doing business with CATA or Commonwealth. These rights and remedies are in addition to those the Commonwealth or CATA may have under law, statute, regulations, otherwise.

12. The Contractor is not currently and/or has not been debarred or suspended from doing business with the Commonwealth, the Federal Government, or CATA except in the following instances:

*(if None write NONE)*

- 1.
- 2.

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_

Signature

State of \_\_\_\_\_ County of \_\_\_\_\_

Sworn and subscribed to before me this date \_\_\_\_\_ of \_\_\_\_\_, 20\_\_

Notary Public:

My Commission Expires:

**(FAILURE TO COMPLETE THIS FORM AND SUBMIT WITH YOUR PROPOSAL WILL RENDER THE PROPOSAL NON-RESPONSIVE)**

**Section 00200 – Supplemental Instructions to Bidders**

**Table of Articles**

**Article 1 –Abbreviations and Definitions**

- 1.1 Abbreviations and Definitions
- 1.2 Referenced Standards

## ARTICLE 1 – ABBREVIATIONS AND DEFINITIONS

### 1.1 Abbreviations And Definitions

#### A. General

Whenever in the Contract Documents the following abbreviations and terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as set forth below.

#### B. Abbreviations

AA	Aluminum Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
AFI	American Filter Institute
AGC	Associated General Contractors of America
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALSC	American Lumber Standards Committee
AMCA	Air Moving and Conditioning Association
AMRL	AASHTO Materials Reference Laboratory
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
APTA	American Public Transit Association
ARI	American Refrigeration Institute
ARRA	American Recovery and Reinvestment Act of 2009
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
ATSSA	American Traffic Safety Services Association

AWG	American Wire Gage
AWPA	American Wood-Preservers' Association
AWPI	American Wood-Preservers' Institute
AWS	American Welding Society
AWWA	American Water Works Association
CATA	Centre Area Transportation Authority
CCRL	Cement and Concrete Reference Laboratory (ASTM)
CDW	Concrete Diaphragm Wall
CEQA	Construction Engineering Quality Assurance
CFR	Code of Federal Regulations
CIP	Cast In Place
CISPI	Cast Iron Soil Pipe Institute
CPM	Critical Path Method
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DBE	Disadvantaged Business Enterprise
DFT	Dry Film Thickness
DOL	United States Department of Labor
DOT	United States Department of Transportation
EDPM	Ethylene Propylene – Diene Monomer
EEI	Edison Electric Institute
EEO	Equal Employment Opportunity
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
IACS	International Annealed Copper Standard
IEC	International Electrotechnical Committee
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IFI	Industrial Fasteners Institute
IMIAC	International Masonry Industry All Weather Council
IMSA	International Municipal Signal Association <sup>2</sup>
IPCEA	Insulated Power Cable Engineers Association

ITE	Institute of Transportation Engineers
JIC	Joint Industrial Council
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
MUTCD	Manual of Uniform Traffic Control Devices
NAAM	National Association of Architectural Manufacturers
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCHRP	National Cooperative Highway Research Program
NCSA	National Crushed Stone Association
NEC	National Electrical Code
NEIS	National Electrical Installation Standards
NEMA	National Electrical Manufacturers' Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIOSH	National Institute of Safety and Health
NIST	National Institute of Standards and Technology
NLGA	National Lumber Grades Authority
NLMA	National Lumber Manufacturers' Association
NPCA	National Precast Concrete Association
NPDES	National Pollutant Discharge Elimination System
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor
PaDEP	Pennsylvania Department of Environmental Protection (formerly PaDER)
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PDA	Pre-Determined Amount
PEI	Porcelain Enamel Institute
PENNDOT	Pennsylvania Department of Transportation
PPC	Preparedness, Prevention and Contingency Plan
PTI	Post Tensioning Institute
PTM	Pennsylvania Testing Method

PUC	Public Utility Commission
RCRA	Resource Conservation and Recovery Act
RFI	Request for Information
RMA	Rubber Manufacturer's Association
SAE	Society of Automotive Engineers
SDR	Standard Dimension Ratio
SHPO	State Historic Preservation Officer
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council
TCP	Traffic Control Plan
TIA	Telecommunications Industry Association
TSC	Transportation Systems Center, DOT
TSCA	Toxic Substances Control Act
UL	Underwriters Laboratories, Inc.
USAS	United States of America Standard
USBM	United States Bureau of Mines
USC	United States Code
USCG	United States Coast Guard
USGAO	United States General Accounting Office
USSG	United States Standard Gage
USSWG	United States Steel Wire Gage
WCLA	West Coast Lumbermen's Association
WWPA	Western Wood Products Association

C. Definitions

**Acceptance Certificate**

Certificate to be issued by Authority certifying acceptance of the Work.

**Addenda**

Written interpretations, clarifications, and revisions to any of the Bid Documents issued by Authority or its authorized representative before the bid opening.

**Agreement**

The instrument executed by Authority and the Contractor in conformance with the Contract Documents for the performance of the Work.

**Approved**

The written approval, endorsement or authorization by Authority, the Owners Representative of a proposal, plan, procedure, action, document, report, specification, design, or any parts thereof, undertaken, promulgated, or developed by the Contractor in accordance with the indicated requirements of the Contract Documents.

**Architect**

The individual or entity named as such in the Contract Documents, acting within the scope of the particular duties assigned. Refer to Owner's Representative.

The Architect is the firm of CDM Architects Inc., 503 Martindale Street, Suite 500, Pittsburgh, Pennsylvania 15212.

**AASHTO Division (No.) (Article No.)**

AASHTO Standard Specifications for Highway Bridges Division I Design or Division II Construction and Article Number, e.g., AASHTO Division II 11.6.4.

**Authority (CATA)**

Centre Area Transportation Authority, acting by and through its officers, employees, agents or authorized representatives, designated by Authority.

**Bid Guaranty**

Cashier's check, certified check or Bid Bond accompanying the Bid submitted by the Bidder as a guaranty that the Bidder will enter into a Contract with Authority for the performance of the Work indicated and file acceptable bonds and insurance if the Contract is awarded to it.

**Bid Item (See Contract Item)****Building Owner**

An individual, firm, partnership, corporation, company, association, joint stock association, or governmental or other entity having ownership, or duly authorized to act on behalf of those having ownership, of a building adjacent to or on the Worksite, or a building in which portions of the Work shall be performed.

**Calendar Day**

Each and every day shown on the calendar.

**Certificate of Acceptance of Final Inspection**

Certificate issued by Authority certifying acceptance of the Work with the exception of contractual administrative demobilization work.

**Certificate of Compliance**

Certificate issued and notarized by the manufacturer certifying that material or equipment furnished is in compliance with the Contract Documents.

**Change Order**

A written order issued by Authority to the Contractor, delineating changes in the Contract Documents and establishing the basis of payment and time adjustments for the portion of the Work affected by the changes.

**Complete in Place**

The completion of all work on a Contract Item, in place, for which payment will include all material, equipment, tools, labor, and work incidental thereto, unless otherwise specified.

**Conditional Acceptance**

Authority's written acknowledgement of the acceptance of a portion of the Work. Such Conditional Acceptance shall not waive or relinquish any rights of Authority under the Contract Documents.

**Construction Manager**

The individual or entity named as such in the Contract Documents, acting within the scope of the particular duties assigned.

**Contract Drawings**

The official plans, profiles, typical cross sections, general cross sections, elevations and details in the Contract Documents which show the locations, character, dimensions and details of the Work.

**Contract Fixed Price Item**

A specifically described item of work which is pre-priced in the Bid Documents.

**Contract Item (Pay Item)**

An item of work for which a price is provided in the Contract Documents.

**Contract Specifications (Specifications)**

The directions, provisions, and requirements contained, or referenced, in the Contract Documents prescribing the requirements for performing the Work, or to the quantities and qualities of materials to be furnished or incorporated into the Work.

**Contract Sum**

The total dollar amount of the Contract, as it may be adjusted, from time to time, in accordance with the Contract Documents.

**Contract Time (Time of Completion)**

The number of Calendar Days set forth in the Contract Documents for completion of the Work.

**Data**

Written information, including but not limited to, calculations and catalog cuts, prepared by the Contractor, its Subcontractors, or Suppliers in response to requirements set forth in the Contract Documents.

**Day(s)**

Day(s) mean Calendar Day(s), unless otherwise designated.

**Engineer**

The individual or entity named as such in the Contract Documents, acting within the scope of the particular duties assigned. Refer to Owner's Representative.

The Engineer is the firm of CDM Smith Inc., 503 Martindale Street, Suite 500, Pittsburgh, Pennsylvania 15212.

**Erection Drawings**

Working Drawings and calculations that Contractor, its Subcontractors, or Suppliers prepare which illustrate proposed method of erection.

**Execution of the Agreement**

The signing of the Agreement by the authorized representative of Authority and the authorized representative of the Contractor.

**Extra Work**

An item of work not provided for in the Contract Documents but found essential to the acceptable completion of the Project and requiring a Change Order.

**Failure**

Any detected inability of a material or equipment, or any portion thereof, to function or perform in accordance with the Contract Documents.

**Field Order**

A written notice issued to the Contractor by the Owners Representative specifying an action required of the Contractor.

**Final Inspection**

The inspection conducted by Authority, the Owners Representative verifying that the Work, with the exception of required contractual administrative demobilization work, has been satisfactorily completed in accordance with the Contract Documents.

**Inspector**

The Authority's authorized representative assigned to make inspections of the Work.

**Joint Venture**

A legal association of entities formed for the purpose of bidding and executing the Contract as a single business entity.

**Maintenance Bond(s)**

The approved form of security furnished by the Contractor and its Surety as a guaranty to remedy, without cost to Authority, any defects in the Work which may develop during the period(s) specified in the Contract Documents.

**Notice of Award**

A written notification from Authority to Bidder stating Authority has selected it as the responsible Bidder with the lowest responsible Bid.

**Notice to Proceed**

A written notice from Authority to the Contractor directing the Contractor to proceed with the Work.

**Owner**

Centre Area Transportation Authority, acting by and through its officers, employees, agents or authorized representatives, designated by Authority.

**Owner's Representative**

The owner's representative is either the Architect, Engineer, Construction Manager, Project Manager, or other approved designee for Centre Area Transportation Authority.

**Performance Bond**

The approved form of security furnished by the Contractor and its Surety as a guaranty to execute the Work in accordance with the Contract Documents.

**Pre-Final Inspection(s)**

All inspection(s), prior to the Final Inspection, conducted by Authority, the Engineer, or the Owners Representative, to determine if the Work, or any portion thereof, declared by the Contractor to be complete, has been satisfactorily completed in accordance with the Contract Documents, with the exception of contractual administrative demobilization work.

**Product Data**

Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.

**Professional Engineer (P.E.)**

An engineer having a current Professional Engineer's license in the Commonwealth of Pennsylvania.

**Professional Land Surveyor (P.L.S.)**

A surveyor having a current Professional Land Surveyor's license in the Commonwealth of Pennsylvania.

**Project Record Documents**

A copy of the Contract Documents, Field Orders, Change Orders, approved Shop Drawings, Working Drawings, Data, Samples, As-Built Drawings and Data, and other documents required to be maintained by the Contractor during the Work.

**Provided**

Provided shall mean furnished, installed and completed by the Contractor in accordance with the Contract Documents.

**Reference Drawings**

Drawings provided for informational purposes only which (1) indicate conditions which may exist in the field (i.e., Authority As-Built or Design Drawings from other projects) and/or (2) provide information as used by other outside agencies (i.e., selected PENNDOT Standard Drawings). The information included on such drawings shall not be construed as accurate and must be confirmed in the field by the Contractor.

**Substantial Completion**

For the purposes of this Contract, substantial completion shall mean the date of the issuance of the Certificate of Acceptance of Final Inspection.

**Supplier**

Any individual, partnership, firm, corporation, joint venture or any combination thereof, who provides material, products, equipment or systems, but not labor or services, to the Contractor by virtue of an agreement with the Contractor.

**Surety**

The corporate body which is bound with and for the Contractor for the satisfactory and timely performance of the Work by the Contractor, and the prompt payment in full for materials, labor, equipment, rentals, and services, as provided in the bonds required by the Contract Documents.

**Technical Specifications**

Specific requirements setting forth the descriptions of elements of the Work to be performed, the quality of required labor, material and equipment.

**Temporary Work**

Work provided by the Contractor for use during the performance of the Work, but which is to be removed prior to Final Inspection.

**Terms and Conditions**

Instructions to Bidders with Attachments, and Specification Sections 00100 through 01740 inclusive.

**Time of Completion (See Contract Time)****Total Bid**

The total monetary amount of the Bid in dollars for performance of the Work calculated in accordance with the Bid Documents.

**U. S. Department of Transportation (DOT)**

The Secretary of the United States Department of Transportation and other persons who may at the time be acting in the capacity of the Secretary or as an authorized representative of the Secretary or other persons otherwise authorized to perform the functions to be performed by DOT, including representatives of the Federal Transit Administration (FTA).

**Work (Project)**

All operations, materials, equipment and labor required to furnish or provide a completed improvement as specified, shown, or indicated in the Contract Documents, including all alterations, amendments or extensions thereto made by Change Order, and all necessary and required administrative activities.

**Working Drawings**

Drawings and calculations prepared by the Contractor, its Subcontractors, or Suppliers, which illustrate work required for the construction of, but which will not become an integral part of, the Work, including, but are not limited to, drawings showing Contractor's plans for Temporary Work such as: decking, temporary bulkheads, support of excavation, support of utilities, groundwater control systems, forming and falsework, erection plans and underpinning.

**Worksite**

The area indicated in the Contract Documents in which the Contractor is to perform the Work. It shall also include areas obtained or used by the Contractor in connection with the Work, and any Authority property authorized for use by the Contractor in the performance of the Work.

**2.2 Referenced Standards**

- A. All materials, equipment and workmanship, specified by the number, symbol, or title of a referenced standard shall comply with the latest edition or revision thereof and all amendments and supplements thereto in effect on the date of the Advertisement, except where otherwise expressly stated.

**END OF SECTION**

## **Section 00500 – Conditions Affecting the Work**

### **Table of Articles**

#### **Article 1 – Coordination of the Work Site**

- 1.1 Contractor Notification
- 1.2 Partial Owner Occupancy

#### **Article 2 – Time of Completion**

- 2.1 Time of Completion
- 2.2 Additional Shift Work
- 2.3 Damages

## **ARTICLE 1 –COORDINATION OF THE WORK SITE**

### **1.1 Contractor Notification**

- A. The Contractor shall keep the Owner’s Representative informed of the Contractor’s planned work shifts at all times. The Contractor shall inform the Owner’s Representative at least forty-eight (48) hours prior to any changes in the planned work shifts including, but not limited to, increasing the work shifts or scheduling multiple shifts, overtime, or weekend activities.
- B. The Contractor shall notify affected authorities, agencies, businesses and residents by letter thirty (30) days prior to the start of construction and at least 72 hours in advance of the interruption of utility service or the interruption of access. The Contractor shall submit a copy of the proposed notice to the Owner’s Representative for review and approval prior to issuing such notice. The Contractor shall provide a copy of each notice to the Owner’s Representative.

### **1.2 Partial Owner Occupancy**

- A. The Contractor shall schedule his/her operations so as to complete certain areas of the Work, as designated below, to enable partial Owner's operations during construction, prior to Substantial Completion of the entire Work.
  - 1. Maintenance and Bus Storage Buildings – Owner’s Bus operations and maintenance will continue throughout construction. Construction will be phased to accommodate all operations and maintenance personnel activities. Operations hours are as follows:
    - a) 7 days a week, Monday-Friday 4:00 AM – 1:00 AM
    - b) Peak hours of operation - 4:30 – 7:30 AM and 2:30 – 4:00 PM – (approx 30-40 drivers)
    - c) Saturday/Sunday - 5:30 AM – 8:00 PM
  - 3. Contractor shall conduct the work to accommodate the following maintenance requirements:
    - a) Owner will continue maintenance operations throughout construction.
    - b) Contractor shall keep all maintenance bays open for Owner occupancy at all times.
    - c) Shop tools must remain operable throughout construction. Owner will relocate shop tools to accommodate phasing, contractor to coordinate.

## **ARTICLE 2 – TIME OF COMPLETION**

### **2.1 Time of Completion**

- A. The Contractor shall complete all portions of the Work within 120 calendar days after the effective date of the Notice-to-Proceed.

Time shall be computed starting with the first day after receipt of the Notice to Proceed and ending with the last day of the Work with the exception of the contractual administrative demobilization work.
- B. The Contractor shall only be granted an adjustment in the Time of Completion for a delay in the completion of the Work:
  - 1. Due to a Change Order issued pursuant to Section 01035;

2. Due to unforeseen causes beyond the control and without the fault or negligence of the Contractor such as those caused by act of God or of a public enemy, fire, floods, unusually severe weather, epidemics, quarantine restrictions, strikes and other work stoppage caused by a labor dispute, shortage of materials and freight embargoes, provided that the Contractor has taken reasonable precautions to prevent delays due to such causes.
  - a) Unusually severe weather is defined as adverse occurrences beyond the weather norms substantiated by the U.S. Department of Commerce in their Local Climatological Data as published by the National Oceanic and Atmospheric Administration - Environmental Data Service, in their periodic reports and annual summary.
  - b) An adjustment in the Time of Completion shall not be granted for a delay caused by a shortage of materials, unless the Contractor furnishes to the Owner's Representative documentary proof that the Contractor has diligently made every effort to obtain such materials from all known and reasonable sources. The Contractor shall also submit proof, in the form of a time impact analysis, as referenced in this Section, showing that the inability to obtain such materials when originally planned did in fact cause a delay in the Time of Completion which delay could not be eliminated or reduced by revising the sequence of the Contractor's operations. No consideration shall be given to any claim that material could not be obtained at a reasonable, practical or economic cost. Further, no consideration shall be given to any claim resulting from the Contractor's failure to timely secure a contract for the purchase and delivery of any material.
- C. As a condition for the Contractor to receive a change in the Time of Completion, the Contractor shall immediately notify the Owner's Representative in writing that a delay is occurring. The Contractor shall notify the Owner's Representative in writing of the alleged causes for delay within five (5) days from the beginning of any such delay.
- D. Within thirty (30) days after the end of an alleged delay, the Contractor shall furnish the Owner's Representative with detailed written information, satisfactory to the Owner's Representative, concerning the circumstances of the alleged delay, the number of days actually delayed, the appropriate Contract Document references providing entitlement for the delay, the measures taken to prevent or minimize the alleged delay, all activities impacted by the delay and the resequencing required to overcome the delay. Failure by the Contractor to submit such information shall be sufficient cause for Authority to deny the Contractor's request for an adjustment in the Time of Completion. After receipt of such information from the Contractor, Authority will decide the length of the adjustment in the Time of Completion, if any, to be granted to the Contractor, which decision shall be final and binding upon the Contractor.

## 2.2 Additional Shift Work

- A. The times specified in the Contract Documents for the completion of all or any portion of the Work may be insufficient to permit the Contractor to work a normal number of hours per day or week on a single shift basis. Where additional shifts, overtime work or weekend work are necessary to ensure that the Work is completed within the time specified in the Contract Documents, the Contractor shall utilize such additional shifts, overtime work and weekend work and any resulting additional costs

shall be considered to be already included in the Contract Sum and no additional compensation shall be allowed to the Contractor.

- B. 1. If, in the opinion of the Owner's Representative, the Contractor at any time falls behind the Project Schedule, the Contractor shall, without any additional cost to Authority, take any and all steps necessary to improve its progress to ensure compliance with the Time of Completion requirements of the Contract.
- 2. The Contractor shall submit, within seven (7) days of a request from the Owner's Representative for approval by the Owner's Representative, a revised Project Schedule detailing the specific operational changes to be instituted to complete the Work in accordance with the Time of Completion requirements of the Contract Documents.

### 2.3 Damages

- A. In the event the Work or a designated portion of the Work is not completed within the time specified in the Contract Documents, damage will be sustained by Authority.
  - 1. Damages may include additional construction management costs for the Owner's Representative, increased inspection costs, increased costs for Authority's administration of the Contract, increased design services and submittal review costs.
  - 2. The Contractor, solely as compensation for such damages, shall pay to Authority the amount or amounts set forth in Appendix A of the contract conditions as liquidated damages per day for every day, or fraction of a day, delay in finishing the Work or any designated portion thereof. The liquidated damages are not to be construed, in any sense, as a penalty.
- B. The Owner's Representative will notify the Contractor in writing, prior to assessing liquidated damages, of the date that the assessment of the liquidated damages will commence. The Liquidated Damages will be deducted from the next Contractor's progress payment following the issuance of the Owner's Representative's notification letter and shall continue to be deducted until the Work is completed.
- C. Liquidated Damages are not a change to the Contract but are a reduction from the amount to be paid to the Contractor under the Contract.
- D. The remedies provided herein are not exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

**END OF SECTION**

**Section 00700 – Supplemental General Conditions**

**Table of Articles**

**Article 1 – Responsibility of the Owner’s Representative**

**Article 2 – Supervision of Construction**

**Article 3 – Use of Explosives**

**Article 4 – Differing Site Conditions**

**Article 5 – Sanitary Provisions**

**Article 6 – Recovered Materials**

**Article 7 – Disposal of Material Outside the Worksite**

**Article 8 – Laws to be Observed**

**Article 9 – PA One-Call**

**Article 10 – Third Party Coordination**

**Article 11 – Permits**

## **ARTICLE 1 – RESPONSIBILITY OF THE OWNER’S REPRESENTATIVE**

- 1.1 The Owner’s Representative will act on behalf of Authority to the extent provided in the Contract Documents. All instructions issued by the Owner’s Representative shall have the same force as if issued by Authority. The Owner’s Representative will determine whether the Contractor’s performance of the Work is in conformance with the Contract Documents.
- 1.2 The Owner’s Representative has the authority to issue a Stop Work Order to stop a specific work activity if, in the Owner’s Representative’s opinion, the work activity is not being executed by the Contractor in accordance with the Contract Documents. Any costs incurred by the Contractor as a result of the issuance of a Stop Work Order shall be the responsibility of the Contractor.

## **ARTICLE 2 –SUPERVISION OF CONSTRUCTION**

- 2.1 The Contractor shall supervise and direct the Work and shall be solely responsible for all means, methods, techniques, sequences and procedures required to properly and safely complete the Work.
- 2.2 Before starting the Work, the Contractor shall provide, in writing to the Owner’s Representative, the name, qualifications, and experience of its proposed representative and alternate. Upon approval by the Owner’s Representative, the proposed representative and alternate shall have complete authority to represent and act on behalf of the Contractor. This authorized representative or alternate shall be present at the Worksite at all times while the Work is in progress.
- 2.3 The Contractor shall request, in writing, approval from the Owner’s Representative, when it desires to change its representative or alternate and shall provide all information requested by the Owner’s Representative regarding the new representative or alternate. The Owner’s Representative will, within five (5) working days after receipt of such request, reply to such request from the Contractor.
- 2.4 If the Owner’s Representative determines that a member of the Contractor’s management and/or supervisory staff is not effective in executing his or her duties, the Owner’s Representative may direct, in writing, with specific reasons for doing so, the Contractor to replace the current member of its management and/or supervisory staff with a new qualified member. The Contractor shall reply to such notice from the Owner’s Representative within three (3) working days of receipt of such notice and shall provide necessary information to the Owner’s Representative regarding its new staff member for approval.

## **ARTICLE 3 – USE OF EXPLOSIVES - RESERVED**

## **ARTICLE 4 – DIFFERING SITE CONDITIONS**

- 4.1 The Contractor shall immediately, upon the initial discovery of subsurface, geological or latent physical conditions at the Worksite differing from those indicated in the subsurface data, or unknown physical conditions at the Worksite, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in this type of work notify the Owner’s Representative in writing.

- 4.2 The Owner's Representative will promptly investigate the conditions, and determine if the actual conditions do differ materially from those indicated in the Contract Documents, or are unknown physical conditions of an unusual nature.
- 4.3 No request by the Contractor for an equitable adjustment, or claim by the Contractor, arising from an alleged differing site condition, shall be considered timely unless the Contractor has given the required notice.

#### **ARTICLE 5 – SANITARY PROVISIONS**

- 5.1 The Contractor shall conform to all applicable OSHA and other federal, state, county and municipal laws and regulations pertaining to sanitary provisions.

#### **ARTICLE 6 – RECOVERED MATERIALS**

- 6.1 The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

#### **ARTICLE 7 – DISPOSAL OF MATERIAL OUTSIDE THE WORKSITE**

- 7.1 The Contractor shall be responsible for properly and lawfully disposing of, outside of the Worksite, all waste, hazardous substances, or hazardous waste and excess materials and shall pay all costs incurred therefore.
- 7.2 When any material is to be disposed outside the Worksite, the Contractor shall notify the appropriate Regional Office of the EPA and the PaDEP, or other appropriate local agencies, and request approval of the proposed disposal site. The Contractor shall also obtain a written release from the property owner on whose property the disposal is to be made. Disposal operations shall not begin until the above approvals and releases have been obtained by the Contractor and written evidence of same has been furnished to the Owner's Representative.
- 7.3 The Contractor, in disposing of waste, hazardous substances, or hazardous waste and excess material, shall comply with all federal, state and local governmental laws and regulations concerning such disposal of waste and excess materials.
- 7.4 The Contractor shall indemnify, hold harmless and defend Authority, its directors, officers, employees, agents and authorized representatives and the Owner's Representative from and against all claims, suits or actions of any nature whatsoever, including, but not limited to, those under the Comprehensive Environmental Response Compensation and Liability Act, as amended, (CERCLA), 42 U.S.C. §§ 9601 et seq., brought for or on account of any decision or action for which the Contractor is responsible under this Article 7 and the contract documents.

## **ARTICLE 8 – LAWS TO BE OBSERVED**

- 8.1 The Contractor shall be responsible for keeping itself fully informed of, and shall comply with, all requirements of law, including, but not limited to, all federal, state and local laws, codes, rules and regulations, as well as any changes to these requirements which may become effective during the period of this Contract, which in any manner affect persons engaged or employed in the Work, affect the materials used in the Work, or affect, in any way, the conduct of the Work, and all orders and decrees of bodies or tribunals having jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any requirements of law, the Contractor shall immediately report the same to Authority in writing.
- 8.2 The Contractor shall include this requirement in each subcontract.

## **ARTICLE 9 – PA ONE-CALL - RESERVED**

## **ARTICLE 10 –THIRD PARTY COORDINATION**

- 10.1 The Contractor shall notify the railroad, local municipality, police and fire departments, private and public agencies, and utilities affected by the Work.
- 10.2 The Contractor shall coordinate requirements for the protection, placement, replacement, relocation, adjustments or reconstruction of utilities with the utility owner prior to starting related portions of the Work. The Contractor shall conduct its operations in a manner that ensures that the utilities will not be disturbed or endangered and shall assume full responsibility for any damage to utilities during construction. Authority will not assume responsibility for reimbursement, participation in design and/or revisions or liability for accuracy of type, size and location of any utility. The Contractor shall submit to the Owner's Representative a work schedule for utility related work including time periods when utility services will be disrupted.
- 10.3 If construction activities cause an unanticipated interruption to any utility service, the Contractor shall take the following actions immediately:
- A. Notify fire and police services in the local jurisdiction if the nature of the utility service interruption is safety related;
  - B. Contact the affected utility company and confirm when repairs will begin;
  - C. Inform the Owner's Representative; and
  - D. Contact affected local residences or businesses. Inform them as to when repairs will begin and be completed.
- 10.4 All costs incurred by a utility to permit a disruption of utility service shall be the responsibility of the Contractor. Further, should the Contractor elect to coordinate any temporary relocations by a utility to facilitate its operations, the Contractor shall be responsible for all costs resulting therefrom.

**ARTICLE 11 – PERMITS**

- 11.1 The Contractor shall be responsible for obtaining any and all licenses, permits and approvals necessary for the prosecution of the Work and for complying with any and all applicable federal, state and local laws, codes, rules and regulations in connection with the prosecution of the Work. Payment for building permits will be paid by the Authority. The Contractor shall provide required engineering documents to obtain all permits/approvals.
  
- 11.2 The Contractor shall provide to the Owner's Representative, copies of all permits and notifications to and from the permitting agencies prior to the start of any related work.

**END OF SECTION**

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 LOCATION OF WORK

- A. The work of this Contract is located at 2081 W. Whitehall Road, State College, Pennsylvania 16801-2623.

1.02 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to complete the removal and installation of a new Gas Detection System for the existing CATA Bus Maintenance, Servicing, and Storage Facility in its entirety as shown on the Drawings and as specified herein.

- B. The Work includes, but is not necessarily limited to, the following:

- 1. Mechanical (HVAC), Contract No. 1

- a. The Scope of the HVAC Contract shall include, but is not limited to the work indicated in the HVAC Drawings and specified herein for the installation of a gas detection system in the Bus Maintenance and Storage Building.

- 1) Provide all labor, tools, equipment, accessories, and installation materials required to install the gas detection system and resulting sequence of operations for existing HVAC equipment within each zone as specified in this Section. The following equipment is included:

- a) Methane (CH<sub>4</sub>) gas monitoring system.
- b) Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) gas monitoring system.
- c) Retrofit of existing HVAC equipment controls to support the sequence of operations.
- d) Add alternate price for auto calibration system.

- C. Alternates

- 1. Add Alternate 1: Auto Calibration System

- a. The add alternate auto calibration system shall consist of the following components including but not limited to two wall mounted gas cylinder support racks; one Size A cylinder of Zero Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; one Size A cylinder of 2.5% Methane Span Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; a central control panel to govern the auto calibration system and

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record data; six zone control gas panels; and all tubing, isolation valves, solenoid valves, piping supports, conduit, control wiring, communication wiring, and relays.

END OF SECTION 01010

Section

SECTION 01026

APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to the Owner's Representative in accordance with the schedule established by Conditions of the Contract and Agreement between Owner and Contractor.
- B. The accepted Schedule of Values, Section 01370, shall be used as the basis for the Contractor's Application for Payment.

1.02 RELATED WORK

- A. Contract Provisions are included in Section 00100.
- B. Schedule of Values is included in Section 01370.
- C. Contract Closeout is included in Section 01700.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, applications typed on forms provided by the Owner's Representative, Application for Payment, with itemized data typed on 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper continuation sheets.
- B. Provide itemized data on continuation sheet.
  - 1. Format, schedules, line items and values: Those of the Schedule of Values accepted by the Engineer.
- C. Provide construction photographs in accordance with Section 01300.

1.04 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form
  - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
  - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
  - 3. Execute certification with signature of a responsible officer of Contract firm.

B. Continuation Sheets

1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
  - a. Round off values to nearest dollar, or as specified for Schedule of Values.
3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
  - a. List by Change Order Number and description, as for an original component item of work.
4. To receive approval for payment on component material stored on site, submit copies of the original paid invoices with the application for payment.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Owner's Representative requires substantiating data, submit suitable information, with a cover letter identifying.
  1. Project.
  2. Application number and date.
  3. Detailed list of enclosures.
  4. For stored products:
    - a. Item number and identification as shown on application.
    - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.
- C. As a prerequisite for payment, submit a "Surety Acknowledgement of Payment Request" letter showing amount of progress payment which the Contractor is requesting.
- D. Maintain an updated set of drawings to be used as record drawings in accordance with Section 01720. As a prerequisite for monthly progress payments, exhibit the updated record drawings for review by the Owner and the Engineer.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 - Contract Closeout.

- C. Submit all Project Record Documents in accordance with Sections 01720.

1.07 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Owner's Representative at the times stipulated in the Agreement.
- B. Number: Five copies of each Application.
- C. When the Owner's Representative finds Application properly completed and correct, he/she will transmit certificate for payment to Owner, with copy to Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01026

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SECTION 01035

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
  - 1. Provide full written data required to evaluate changes.
  - 2. Maintain detailed records of work done on a time-and-material/ force account basis.
  - 3. Provide full documentation to Owner's Representative on request.
- B. Designate in writing the member of Contractor's organization:
  - 1. Who is authorized to accept changes in the Work.
  - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. Owner will designate in writing the person who is authorized to execute Change Orders.

1.02 RELATED REQUIREMENTS

- A. Applications for Payment are included in Section 01026.
- B. Schedule of Values is included in Section 01370.
- C. Project Record Documents are included in Section 01720.

1.03 DEFINITIONS

- A. Change Order: See Contract for Construction.
- B. Construction Change Authorization: A written order to the Contractor, signed by Owner and Owner's Representative, which amends the Contract Documents as described and authorized Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Architect's Supplemental Instructions, AIA Document G710: A written order, instructions, or interpretations, signed by Architect/Engineer making minor changes in the Work not involving a change in Contract Sum or Contract Time.
- D. Field Order: A written order to the Contractor signed by the Owner's Representative and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. The work described by a Field Order is to

be accomplished without change to the Contract Sum, Contract Time, and/or claims for other costs.

#### 1.04 PRELIMINARY PROCEDURES

- A. Owner or Owner's Representative may initiate changes by submitting a Request for Proposal (RFP) to Contractor. Request will include:
  - 1. Detailed description of the Change, Products and location of the change in the project.
  - 2. Supplementary or revised Drawings and Specifications.
  - 3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
  - 4. A specific period of time during which the requested price will be considered valid.
  - 5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to Owner's Representative, containing:
  - 1. Description of the proposed changes.
  - 2. Statement of the reason for making the changes.
  - 3. Statement of the effect on the Contract Sum and the Contract Time.
  - 4. Statement of the effect on the work of separate contractors.
  - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

#### 1.05 WORK DIRECTIVE CHANGE AUTHORIZATION

- A. In lieu of a Request for Proposal (RFP), Engineer may issue a work directive authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. Owner and Owner's Representative will sign and date the Work Directive Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor may sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow Owner's Representative to evaluate the quotation.
- B. On request, provide additional data to support time and cost computations
  - 1. Labor required.
  - 2. Equipment required.
  - 3. Products required.
    - a. Recommended source of purchase and unit cost.
    - b. Quantities required.
  - 4. Taxes, insurance and bonds.
  - 5. Credit for work deleted from Contract, similarly documented.
  - 6. Overhead and profit.
  - 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
  - 1. Name of the Owner's authorized agent who ordered the work and date of the order.
  - 2. Dates and times work was performed and by whom.
  - 3. Time record, summary of hours worked and hourly rates paid.
  - 4. Receipts and invoices for:
    - a. Equipment used, listing dates and times of use.
    - b. Products used, listing of quantities.
    - c. Subcontracts.

1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

- A. Owner's Representative will prepare each Change Order and Field Order.
- B. Change Order will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

- D. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the work, and/or memorialize trade-off agreements.
- E. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

#### 1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. Owner's Representative's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
  - 2. Contractor's Proposal for a change, as recommended by Owner's Representative.
- B. Owner and Owner's Representative will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

#### 1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
  - 1. Owner's Representative's definition of the scope of the required changes.
  - 2. Contractor's Proposal for a change, as recommended by Owner's Representative.
  - 3. Survey of completed work.
- B. The amounts of the unit prices to be:
  - 1. Those stated in the Agreement.
  - 2. Those mutually agreed upon between Owner and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
  - 1. Owner and Owner's Representative will sign and date the Change Order as authorization for Contractor to proceed with the changes.
  - 2. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

- D. When quantities of the items cannot be determined prior to start of the work:
1. Owner's Representative will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
  2. At completion of the change, Engineer will determine the cost of such work based on the unit prices and quantities used.
    - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
  3. Owner's Representative will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
  4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE  
CHANGE AUTHORIZATION

- A. Owner's Representative and Owner will issue a Work Directive Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. Owner's Representative will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. Owner's Representative will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. OWNER and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
  1. Revise subschedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

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PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01035

CHANGE ORDER

Contract Number: \_\_\_\_\_

Change Order Number: \_\_\_\_\_

Original Contract Price \$ \_\_\_\_\_

Net Increase/Decrease in Contract Price (this change order) \$ \_\_\_\_\_

Total Adjusted Contract Price (including this change order) \$ \_\_\_\_\_

This change order increases/decreases the time to complete the work by \_\_\_\_\_ Calendar days.

The extended completion date is \_\_\_\_\_.

This change order checked by \_\_\_\_\_  
(Chief) Resident Engineer Date

This change order is requested by \_\_\_\_\_.

This change order is recommended by:  
\_\_\_\_\_  
Consultant Engineer P.E. # Date

The undersigned agree to the terms of the change order.

\_\_\_\_\_  
Contractor Date

\_\_\_\_\_  
Owner Date

Approval as to appropriation:  
\_\_\_\_\_  
Certification Officer Date

Name of City/District etc. \_\_\_\_\_

Contract Number \_\_\_\_\_

Contract Title \_\_\_\_\_

Change Order Number \_\_\_\_\_

Owner's Name: \_\_\_\_\_

Owner's Address: \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Contractor's Address: \_\_\_\_\_

Description of Change

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Reason for Change

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FIELD ORDER

PROJECT: \_\_\_\_\_

FIELD ORDER NO: \_\_\_\_\_

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

CONTRACT: \_\_\_\_\_

OWNER: \_\_\_\_\_

OWNER'S PROJECT NO: \_\_\_\_\_

TO: \_\_\_\_\_

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

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

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This Field Order is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum, Contract Time, and/or claims for other costs.

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DESCRIPTION: (Here insert a written description of the interpretation, change or agreement.)

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FIELD ENGINEER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_ BY: \_\_\_\_\_

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SECTION 01046

CONTROL OF WORK

PART 1 GENERAL

1.01 LABOR, MATERIALS AND EQUIPMENT

- A. Furnish labor, materials and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the work within the Contract Time. If at any time such labor, materials and equipment appear to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, Owner's Representative may order the Contractor to increase the efficiency, change the character or increase the labor, materials and equipment and the Contractor shall conform to such order. Failure of the Owner's Representative to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.02 PRIVATE LAND

- A. Do not enter or occupy private land outside of easements, except by permission of the land owner.

1.03 CARE AND PROTECTION OF PROPERTY

- A. Be responsible for the preservation of all public and private property and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, restore such property to a condition similar or equal to that existing before the damage was done, or make good the damage in other manner acceptable to the Owner's Representative.

1.04 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. Carefully support and protect all such structures and utilities from injury of any kind. Immediately repair any damage resulting from the construction operations.
- B. The Contractor shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Maintain services to buildings and pay costs or charges resulting from damage thereto.

1.05 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with other Prime Contractors and Subcontractors or trades and assist in incorporating the work of other trades where necessary or required.

- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Owner's Representative.

1.06 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, keep the site of operations as clean and neat as possible. Dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and leave the entire site of the work in a neat and orderly condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and in other related sections.
- C. Disposal of excess excavated material in wetlands, stream corridors and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by him will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. The Contractor will be required to remove the fill and restore the area impacted at no increase in the Contract Price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01046

## SECTION 01101

### SAFETY, HEALTH AND EMERGENCY RESPONSE

#### PART 1 GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Pursuant to Section 107 of the Contract Work Hours and Safety Standards Act and DOL Regulations set forth in 29 C.F.R. Part 1926, the Contractor agrees that such provisions are a condition of, and incorporated into, the Contract, and shall be made a condition of each subcontract entered into pursuant to the Contract, that the Contractor and any Subcontractor shall not require any laborer or mechanic employed in performance of the Contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his or her health and safety, as determined under the applicable construction health and safety standards promulgated by the Secretary of Labor or the State.
- B. The Contractor shall promptly and fully comply with, execute and enforce, without separate charge therefore to Authority, the safety and health requirements stated herein and those that may be prescribed by any official or representative charged with the enforcement thereof, and shall take such other measures as may be necessary to assure that the Work shall be done in a safe manner and the safety and health of the employees and the general public are safe-guarded. The Contractor shall be responsible for its Subcontractors' compliance with these provisions.
- C. Copies of all reports submitted to OSHA by the Contractor or any Subcontractor, and also copies of OSHA citations and recommendations, shall be submitted to the Owner's Representative within five (5) days of submission or receipt.
- D. The Contractor shall:
  - 1. The Contractor shall submit three (3) copies of a Safety Program in writing to the Owner's Representative, for review and approval for conformance with the requirements of the Contract Documents, within ten (10) days after receipt of the Notice of Award.
  - 2. The Contractor's Safety Program shall incorporate such programs and activities as may be necessary to comply with OSHA and other applicable federal, state, county and municipal laws and regulations in the performance of the Work. As part of this item, the Contractor shall develop and institute, for the duration of the Contract, procedures in the event of fire, injury, accident or other emergency conditions. This portion of the Safety Program is to be maintained on public display at the Contractor's field office;
  - 3. Designate, at the Pre-Construction Conference, a Safety Supervisor whose duties shall be to implement and enforce the Safety Program; and
  - 4. Conduct weekly Worksite safety meetings. Included at these meetings will be instructions for each employee on the recognition and avoidance of unsafe conditions and the regulations applicable to his or her work environment to control or eliminate any hazards or other exposures to illness or injury. Such meetings shall be administered by the Contractor's Safety Supervisor. Notice of the time and place of such safety meetings shall

be given to the Owner's Representative at least three (3) days in advance of each such meeting. A copy of the safety meeting minutes shall be provided to the Owner's Representative within three (3) days after each safety meeting. The Owner's Representative or Authority shall be invited to, and at their discretion, may attend these meetings.

- E. As an integral part of the Contractor's Safety Program, the Contractor shall prepare and maintain a directory, listing the company name and contact person, business telephone number and emergency telephone number, including a mobile number (i.e. cellular, pager, etc.) as available, for the following, which shall be maintained and updated as required for the duration of the Contract, and shall be provided to Authority and the Owner's Representative and posted at each of the Contractor's telephones and at a prominent place at the Worksite:
1. Contractor's Main Office, including a 24-hour contact for non-business hours;
  2. Contractor's Project Manager;
  3. Contractor's Field Superintendent, Safety Supervisor and any other Contractor's personnel as required by the Engineer;
  4. Each Subcontractor;
  5. Each Authority contractor working adjacent to or on the Worksite;
  6. Owner's Representative's Main Office;
  7. Testing laboratories and batch plants;
  8. Emergency telephone numbers including, but not limited to, physicians, emergency hospitals, ambulance, police and fire department;
  9. Emergency telephone numbers for utility owners who have facilities on or adjacent to the Worksite;
  10. Authority's 24 hour emergency numbers to be provided.
  11. Railroads and other affected agencies and/or authorities;
  12. Pennsylvania Department of Environmental Protection.
- F. Failure of the Contractor to comply with any of the requirements of this Article may be cause for Authority to disqualify the Contractor from bidding on any other Authority contracts.
- G. Should a Responsible Authority, determine that the Contractor's failure to comply with this Article creates a hazard to life, limb or property, the Responsible Authority may stop any operation of the Contractor affected by the failure until such failure is remedied. Any time lost due to any such stoppage of the Work shall not be made the subject of any claim for money or time by the Contractor. The Contractor shall not make any claim for extension of time or for additional compensation or for damages by reason of or in connection with work stoppages directed by any Responsible Authority, by reason of or involving operations which create an imminent danger (as defined by OSHA) to employees, to the public or to property.

- H. The Contractor shall submit to the Owner's Representative and Authority a copy of all accident occurrence reports within 24 hours of occurrence.
- I. The Contractor shall submit one copy of the OSHA Form 300A to the Owner's Representative, no later than the third day of each month. The Contractor shall indicate the total man-hours worked by the Contractor and its Subcontractors during the previous month.
- J. The Contractor shall be solely responsible for initiating, maintaining and supervising safety precautions and programs in connection with the Work.
  - 1. The Contractor shall take reasonable precautions for the safety of, and provide reasonable protection to prevent damage, injury or loss to:
    - a. The materials and equipment for incorporation in the Work whether in storage on or off the site under the care, custody or control of the Contractor or others;
    - b. Other property at the site or adjacent to it, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not for removal, relocation or replacement in the course of construction.
    - c. Vehicle and pedestrian traffic traveling through, under, or around the construction area and construction access areas.
  - 2. The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.
  - 3. The Contractor shall ensure employees, visitors, Subcontractor's employees, and Suppliers' employees, while on the Work site, comply with the provisions of the Williams Steiger Occupational Safety and Health Act of 1970 and any changes thereto.
  - 4. In the event of a conflict and/or ambiguity between various safety statutes or requirements, the interpretation by the Engineer as to which provision(s) applies or what a given provision(s) implies will be final.
- K. Contractor shall employ and assign to the Work a Safety Supervisor whose responsibility shall include in part job safety for this Contract, and whose primary duties shall be assisting in the supervision for the safety of persons on and about the work and affected property.
  - 1. The Contractor shall, within fifteen (15) days after Notice of Award, submit to the Owner's Representative for approval, the qualifications of its proposed Safety Supervisor. Qualifications shall include building construction experience of not less than ten (10) years and five (5) years devoted to, and with responsibility for, job safety. No Work shall commence until the Owner's Representative has approved the Safety Supervisor.
  - 2. The Contractor's Safety Supervisor shall:
    - a. Make daily safety inspections of job sites and take necessary immediate corrective action to eliminate unsafe acts and conditions;

- b. Assure that the OSHA 300A Form Accident Report is properly completed and submitted to the Engineer;
- c. Review accident and incident reports and initiate immediate corrective action;
- d. Provide job foremen with appropriate material for use in conducting weekly “tool box” safety meetings;
- e. Attend foremen “tool box” safety meetings and evaluate their effectiveness;
- f. Assist in the preparation of the accident investigation and reporting procedures;
- g. Implement training programs for supervisors and employees as they apply to their specific responsibilities;
- h. Encourage programs for recognition of individual employee’s safety efforts and their contribution toward improved work methods;
- i. Be responsible for the control and availability of the necessary safety equipment, including employee’s personal protective equipment;
- j. Coordinate activities with those of the other contractors and the Engineer;
- k. Submit a written weekly report summarizing:
  - 1) Daily inspection results;
  - 2) Tool box meetings;
  - 3) Accident investigations; and
  - 4) Planning activities for upcoming operation.
- l. Maintain a current copy of OSHA 29 CFR 1926/1910 Standards on site; and
- m. Maintain a record of the installation and maintenance of the traffic control and highway closure signs, signals, barricades, and devices. The record shall include a written log of daily maintenance and photographs of installations.
- L. If the Owner’s Representative determines that the Safety Supervisor is not effective in executing his or her duties, the Owner’s Representative may direct the Contractor, in writing, to replace the current Safety Supervisor with a new Safety Supervisor.
- M. If or when it should be necessary to replace the Safety Supervisor, the Contractor shall notify the Owner’s Representative, within 72 hours in writing, and submit to the Owner’s Representative the name, experience and qualifications of the proposed replacement Safety Supervisor for approval. The replacement Safety Supervisor shall be approved and on site prior to replacing the current Safety Supervisor.

- N. Imminent Danger - The Contractor shall not make any claim for extension of time or for additional compensation, or for damages by reason of or in connection with Work stoppages that Authority, the Owner's Representative or their authorized representative directs by reason of or involving operations creating an imminent danger (as defined by OSHA) to employees, to the public or to property. Imminent danger, according to OSHA, "is any condition where there is reasonable certainty that a danger exists that can be expected to cause death or serious physical harm immediately or before the danger can be eliminated through normal enforcement procedures".
- O. Safety Program - The Safety Program shall provide guidelines to implement an accident prevention program on the Project, and fully describe the Contractor's commitments for meeting its obligations to provide safe and healthful working conditions for its employees. After Notice of Award, and prior to the start of Work, the Owner's Representative will schedule a meeting with the Contractor to review the Safety Program. The Contractor shall conduct a similar meeting with each Subcontractor at any tier prior to start of the Subcontractor's work, and shall ensure that each Subcontractor complies with the Safety Program. Both meetings will require the attendance of the Contractor's Project Manager and approved Safety Supervisor. Other attendees at the meeting may include representatives from the Owner's Representative and Authority. The intent of the review is to: clarify any issues regarding regulatory compliance or contract requirements; enhance planning for both safety and productivity; and reduce the potential for accidents. The Owner's Representative will review the Safety Program to verify that it complies with the Contract Documents. The Contractor shall not begin the Work until the Owner's Representative approves the Contractor's Safety Program as compliant with the requirements of the Contract Documents.
1. Safety Program Content
- a. Accident Investigation and Procedures – The Contractor shall describe the accident/incident reporting procedures for the Project. The Contractor shall submit to the Engineer a copy of accident/incident reports within 24 hours of occurrence of the following:
- 1) Personal injury to a member of a crew, subcontractor, general public traveling in vehicles or pedestrians, and Authority personnel;
  - 2) Equipment or property damage;
  - 3) Near misses having a potential for serious injury, death or property damage; and
  - 4) Requests of the Engineer.
- b. Employee Sanctions – Explain disciplinary action for any employee who jeopardizes his or her health or safety, or the health or safety of others.
- c. Emergency Procedures – Describe the procedures to familiarize employees with Emergency Procedures for the Project. As a minimum, the procedure shall cover injuries, fires, evacuations, and similar situations, Worksite medical facilities including number and location of stretchers and first aid kits and the location of the First Aid Station.

- d. Fire Protection and Prevention – Explain the Project fire protection and prevention program in detail and how the Contractor shall implement it.
- e. First Aid – Explain the role of supervision and employees in reporting accidents and injuries, however minor. Provide at least two (2) persons at the Worksite with a valid certificate in First Aid/CPR Training. The Contractor shall provide documentation of this training to the Engineer.
- f. Hazard Communications – The Contractor shall provide a written hazard communication program which describes how the Contractor will comply with the requirements of 29 CFR 1926.59 "Hazard Communication".
- g. Medical Surveillance – Explain how it will meet the requirements of 29 CFR 1926.33 "Access to Employee Exposure and Medical Records."
- h. Occupational Health Programs – Provide required, specific occupational health programs to protect employees working on the Project, i.e., air monitoring, sampling, special protective clothing or equipment, particular hazards monitoring including, but not limited to, silica, asbestos and lead, and a Project - wide noise survey.
- i. Personal Protective Equipment – Describe personal protective equipment to be utilized on this Project. Include parameters for its use. Parameters shall include orange or yellow-green (or fluorescent versions of these colors) vest, shirt or jacket in work zones adjacent to traffic.
- j. Safe Work Practices – Explain requirements placed on supervision when making Work assignments. List site specific requirements here and give responsibility for enforcement. Provide competent designated signalmen for crane work. Submit annual crane inspection certificate prior to use of any crane.
- k. Safety Orientation of New Hires – Describe how each new hire or transferee shall receive a thorough safety and hazard communication orientation which imparts basic information about the Project safety and health program, federal and local regulations, and other safety rules and regulations necessary to perform tasks safely. The Contractor shall verify its new hire orientation for each employee. It shall do so in writing with the employee's signature on the letter to attest to its validity within 24 hours of the employee's orientation. The Contractor shall submit verification of employees' rights and duties as required by Section 306 (f.1) of PA Workers Compensation Act. Future safety instructions may be necessary if the Contractor performs hazardous work and/or unfamiliar tasks. Based upon the nature of the work, orientation may include, but not be limited to, the following:
  - 1) Confined spaces;
  - 2) Cranes, rigging and material handling;
  - 3) Electrical safety;
  - 4) Emergency procedures;
  - 5) Evacuation;

- 6) Eye protection;
  - 7) Fall protection;
  - 8) Fire protection;
  - 9) First aid facilities and emergency procedures;
  - 10) Foot protection;
  - 11) Hazard communications;
  - 12) Head protection;
  - 13) Hearing protection;
  - 14) Housekeeping;
  - 15) Medical surveillance;
  - 16) Perimeter guarding;
  - 17) Respiratory protection;
  - 18) Safe work practices on Authority property;
  - 19) Safety harnesses and lifelines;
  - 20) Safety meetings;
  - 21) Scaffolding and ladders;
  - 22) Special Project requirements and procedures;
  - 23) Temporary shoring; and
  - 24) Trenching and excavations.
- l. Safety Orientation For Supervisors – The Contractor shall describe supervisor safety orientation upon hire or promotion. List safety duties and responsibilities in daily work activities.
  - m. Tool Box Safety Meetings – The Contractor shall describe its weekly Toolbox Safety Meetings for its employees and an equivalent requirement that its Subcontractors conduct similar meetings. The meetings shall address material relevant to employees’ activities e.g. hazard communications, pre-job orientation and changing jobs or conditions.
  - n. Task Safety Analysis and Training – The Contractor shall describe its pre-task planning and safety analysis of different phases of the Project. The Contractor shall describe the procedures to train employees in the exposures they will face and the job they are to perform. This is to be done during the pre-job and hazardous communications

orientation. Other situations may arise during the course of the Project requiring additional training. The Contractor shall describe how it shall accomplish this.

- o. Worksite Safety Inspection – The Contractor shall document to the Owner’s Representative its daily Worksite safety inspections.
  - p. Confined Spaces – Identify potential areas constituting confined spaces. Describe plans for ventilation, atmosphere monitoring, access and egress, and personal protective equipment requirements. Describe in detail emergency procedures and equipment. Describe the specific training programs to conduct prior to confined space entry.
  - q. Jobsite Security – Identify proactive measures for security of the Worksite.
2. 100% Fall Protection.
- a. The Contractor shall develop and submit to Owner’s Representative a plan detailing specific actions it shall take to ensure that no employees are exposed to an elevated fall hazard in excess of six (6) feet. The Contractor shall utilize full body harnesses for personal fall protection. At no time shall the Contractor and its Subcontractors use body belts as part of a personal fall arrest system.
  - b. The Contractor shall train personnel in proper fall protection methods and requirements, and give additional training concerning full body harnesses, lanyards, and lifelines. Training shall cover proper use of such equipment, including wearing, securing, and inspection procedures. The Contractor shall maintain documentation of such training on the Project. The Contractor shall institute measures to verify the effectiveness of the training.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01101

SECTION 01200  
PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Owner's Representative shall schedule and administer pre-construction meeting, periodic progress meetings and specially called meetings throughout progress of the work.
  - 1. Prepare agenda for meetings.
  - 2. Make physical arrangements for meetings.
  - 3. Preside at meetings.
  - 4. Record the minutes; include significant proceedings and decisions.
  - 5. Reproduce and distribute copies of minutes within 15 working days after each meeting.
    - a. To participants in the meeting.
    - b. To parties affected by decisions made at the meeting.
- B. Representatives of Contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.

1.02 RELATED REQUIREMENTS

- A. Construction Schedules are included in Section 01320.
- B. Shop Drawings, Working Drawings and Samples are included in Section 01300.
- C. Project Record Documents are included in Section 01720.

1.03 PRE-CONSTRUCTION MEETING

- A. Schedule a preconstruction meeting no later than 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by the Owner's Representative.
- C. Attendance
  - 1. Owner's Representative.
  - 2. Architect and his/her professional consultants.

3. Contractor's Superintendent.
4. Major Subcontractors.
5. Major suppliers.
6. Utilities
7. Others as appropriate.

D. Suggested Agenda

1. Distribution and discussion of:
  - a. List of major subcontractors and suppliers.
  - b. Projected Construction Schedules.
2. Critical work sequencing.
3. Major equipment deliveries and priorities.
4. Project Coordination.
  - a. Designation of responsible personnel.
5. Procedures and processing of:
  - a. Field decisions.
  - b. Proposal requests.
  - c. Submittals.
  - d. Change Orders.
  - e. Applications for Payment.
6. Adequacy of distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of premises:
  - a. Office, work and storage areas.
  - b. Owner's Representative's requirements.
9. Construction facilities, controls and construction aids.

10. Temporary utilities.
11. Housekeeping procedures.

#### 1.04 PROGRESS MEETINGS

- A. Schedule regular periodic meetings. The progress meetings will be held every two weeks with the first meeting 30 days after the pre-construction meeting or 30 days after the date of Notice to Proceed.
- B. Hold called meetings as required by progress of the work.
- C. Location of the meetings: Project field office of Contractor or Owner's Representative.
- D. Attendance
  1. Owner's Representative and his/her professional consultants as needed.
  2. Architect and his/her professional consultants as needed.
  3. Subcontractors as appropriate to the agenda.
  4. Suppliers as appropriate to the agenda.
  5. Others as appropriate.
- E. Suggested Agenda
  1. Review, approval of minutes of previous meeting.
  2. Review of work progress since previous meeting.
  3. Field observations, problems and conflicts.
  4. Problems which impede Construction Schedule.
  5. Review of off-site fabrication, delivery schedules.
  6. Corrective measures and procedures to regain projected schedule.
  7. Revisions to Construction Schedule.
  8. Progress, schedule, during succeeding work period.
  9. Coordination of schedules.
  10. Review submittal schedules; expedite as required.
  11. Maintenance of quality standards.
  12. Pending changes and substitutions.

13. Review proposed changes for:
    - a. Effect on Construction Schedule and on completion date.
    - b. Effect on other contracts of the project.
  14. Other business.
  15. Construction schedule.
  16. Critical/long lead items.
- F. Attend progress meetings and is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics such as deliveries of materials and equipment, progress of the work, etc.
- G. Provide a current submittal log at each progress meeting in accordance with Section 01300.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01200

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section includes the requirements for compiling, processing and transmitting submittals required for execution of the project.
- B. Submittals are categorized into two types: Action Submittals and Informational Submittals, as follows:
  1. **Action Submittal:** Written and graphic information submitted by the Contractor that requires the Owner's Representative's approval. The following are examples of action submittals:
    - a. Shop drawings (including working drawings and product data)
    - b. Samples
    - c. Operation & maintenance manuals
    - d. Site Usage Plan (Contractor's staging - including trailer siting and material laydown area)
    - e. Schedule of values
    - f. Payment application format
  2. **Informational Submittal:** Information submitted by the Contractor that does not require the Owner's Representative's approval. The following are examples of informational submittals:
    - a. Shop drawing schedule
    - b. Construction schedule
    - c. Statements of qualifications
    - d. Health and Safety Plans
    - e. Construction photography
    - f. Work plans
    - g. Outage requests

- h. Proposed testing procedures
- i. Test records and reports
- j. Vendor training outlines/plans
- k. Test and start-up reports
- l. Certifications
- m. Record Drawings
- n. Record Shop Drawings
- o. Submittals required by laws, regulations and governing agencies
- p. Submittals required by funding agencies
- q. Other requirements found within the technical specifications
- r. Warranties and bonds
- s. As-built surveys
- t. Contract close-out documents

#### 1.02 RELATED WORK

- A. Additional submittal requirements may be specified in the respective technical Specification Sections.
- B. Contract closeout submittals are included in Section 01700.
- C. Warranties and Bonds are included in Section 01740.
- D. Applications for Payment are included in Section 01026.
- E. Project Record Documents are included in Section 01720.

#### 1.03 CONTRACTOR'S RESPONSIBILITIES

- A. All submittals shall be clearly identified as follows:
  - 1. Date of submission
  - 2. Project number
  - 3. Project name
  - 4. Contractor identification

- a. Contractor
  - b. Supplier
  - c. Manufacturer
  - d. Manufacturer or supplier representative
5. Identification of the product
  6. Reference to Contract drawing(s)
  7. Reference to specification section number, page and paragraph(s)
  8. Reference to applicable standards, such as ASTM or Federal Standards numbers
  9. Indication of Contractor's approval
  10. Contractor's Certification statement
  11. Identification of deviations from the Contract Documents, if any
  12. Reference to previous submittal (for resubmittals)
- B. Submittals shall be clear and legible, and of sufficient size for legibility and clarity of the presented data.
- C. SUBMITTAL LOG

Maintain a log of all submittals. The submittal log shall be kept accurate and up to date. This log should include the following items (as applicable):

1. Description
2. Submittal number
3. Date transmitted to the Owner's Representative
4. Date returned to Contractor (from Owner's Representative)
5. Status of Submittal (Approved/Not Approved/etc.)
6. Date of Resubmittal to Owner's Representative and Return from Owner's Representative (if applicable and repeat as necessary)
7. Date material released for fabrication
8. Projected (or actual) delivery date

#### D. NUMBERING SYSTEM

Utilize a 9-character submittal identification numbering system in the following manner:

1. The first character shall be a D, S, M or I which represents Shop Drawing (including working drawings and product data), Sample, Manual (Operating & Maintenance) or Informational, respectively.
2. The next five digits shall be the applicable Section Number.
3. The next two digits shall be the numbers 01 to 99 to sequentially number each separate item or drawing submitted under each specific Specification Section, in the order submitted.
4. The last character shall be a letter, A to Z, indicating the submission (or resubmission) of the same submittal, i.e., "A" = 1st submission, "B" = 2nd submission, "C" = 3rd submission, etc. A typical submittal number would be as follows:

D-03300-008-B

D = Shop Drawing  
03300 = Section for Concrete  
08 = the eighth different submittal under this section  
B = the second submission (first resubmission) of that particular shop drawing.

#### E. VARIANCES

Notify the Owner's Representative in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.

#### F. ACTION SUBMITTALS

##### 1. SHOP DRAWINGS, WORKING DRAWINGS, PRODUCT DATA AND SAMPLES

###### a. SHOP DRAWINGS

- 1) Shop drawings as defined in the General Conditions, and as specified in individual Sections include, but are not necessarily limited to, custom prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shop work manufacturing instructions, custom templates, wiring diagrams, coordination drawings, equipment inspection and test reports, including performance curves and certifications, as applicable to the work.
- 2) Contactor shall verify all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and coordinate each item with other related shop drawings and the Contract requirements.

- 3) All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.
- 4) All shop drawings submitted by subcontractors and vendors shall be reviewed by the Contractor for field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and that it has been coordinated with other related shop drawings and the Contract requirements. Submittals directly from subcontractors or vendors will not be accepted.
- 5) The Contractor shall be responsible the accuracy of the subcontractor's or vendor's submittal; and, for their submission in a timely manner to support the requirements of the Contractor's construction schedule. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractor or vendor to correct before submission to the Owner's Representative. All shop drawings shall be approved by the Contractor.
- 6) Delays to construction due to the untimely submission of submittals will constitute inexcusable delays, for which Contractor shall not be eligible for additional cost nor additional contract time. Inexcusable delays consist of any delay within the Contractor's control.

b. WORKING DRAWINGS

- 1) Detailed installation drawings (equipment, piping, electrical conduits and controls, HVAC work, and plumbing, etc.) shall be prepared and submitted for review and approval by the Owner's Representative prior to installing such work. Installation drawings shall be to-scale and shall be fully dimensioned.
- 2) Piping working drawings shall show the laying dimensions of all pipes, fittings, valves, as well as the equipment to which it is being connected. In addition, all pipe supports shall be shown.
- 3) Equipment working drawings shall show all equipment dimensions, anchor bolts, support pads, piping connections and electrical connections. In addition, show clearances required around such equipment for maintenance of the equipment.
- 4) Electrical working drawings shall show conduits, junction boxes, disconnects, control devices, lighting fixtures, support details, control panels, lighting and power panels, and Motor Control Centers. Coordinate all locations with the Contract Documents and the Contractor's other working drawings.

c. PRODUCT DATA

- 1) Product data, as specified in individual Specification Sections, include, but are not limited to, the manufacturer's standard prepared data for manufactured products (catalog data), such as the product specifications, installation instructions, availability of colors and patterns, rough-in diagrams and templates, product photographs (or diagrams), wiring diagrams, performance curves, quality

control inspection and reports, certifications of compliance (as specified or otherwise required), mill reports, product operating and maintenance instructions, recommended spare parts and product warranties, as applicable.

d. SAMPLES

- 1) Furnish, samples required by the Contract Documents for the Owner's Representative's approval. Samples shall be delivered to the Owner's Representative as specified or directed. Unless specified otherwise, provide at least two samples of each required item. Materials or equipment for which samples are required shall not be used in the work unless and until approved by the Owner's Representative.
- 2) Samples specified in individual Specification Sections, include, but are not limited to: physical examples of the work (such as sections of manufactured or fabricated work), small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and other specified units of work.
- 3) Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify and Contract Requirements.
- 4) Approved samples not destroyed in testing shall be sent to the Owner's Representative or stored at the site of the work. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples. Samples which fail testing or are not approved will be returned to the Contractor at his expense, if so requested at time of submission.

e. PROFESSIONAL ENGINEER (P.E.) CERTIFICATION FORM

If specifically required in any of the technical Specification Sections, submit a Professional Engineer (P.E.) Certification for each item required, using the form appended to this Section, signed and sealed by the P.E. licensed or registered in the state wherein the work is located.

2. CONTRACTOR'S CERTIFICATION

- a. Each shop drawing, working drawings, product data, and sample shall have affixed to it the following Certification Statement:

*"Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements."*

- b. Shop drawings, working drawings, and product data sheets 11-in x 17-in and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The transmittal cover sheet for each identified shop drawing shall fully describe the packaged data and include a listing of all items within the package.
3. The review and approval of shop drawings, working drawings, product data, or samples by the Owner's Representative shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Owner's Representative will have no responsibility therefor.
4. Project work, materials, fabrication, and installation shall conform to approved shop drawings (including working drawings and product data) and applicable samples.
5. No portion of the work requiring a shop drawing (including working drawings and product data) or sample shall be started, nor shall any materials be fabricated or installed before approval of such item. Procurement, fabrication, delivery or installation of products or materials that do not conform to approved shop drawings shall be at the Contractor's risk. Furthermore, such products or materials delivered or installed without approved shop drawings, or in non-conformance with the approved shop drawings will not be eligible for progress payment until such time as the product or material is approved or brought into compliance with approved shop drawings. Neither the Owner, Owner's Representative, Architect nor Engineer will be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

6. OPERATION AND MAINTENANCE DATA

Operation and maintenance data shall be submitted in assembled manuals as specified. Such manuals shall include detailed instructions for Owner personnel on safe operation procedures, controls, start-up, shut-down, emergency procedures, storage, protection, lubrication, testing, trouble-shooting, adjustments, repair procedures, and other maintenance requirements.

7. SCHEDULE OF VALUES

On projects consisting of lump sums (in whole or in part) submit a proposed schedule of values providing a breakdown of lump sum items in to reasonably small components – generally disaggregated by building, area, and/or discipline. The purpose of the schedule of values is for processing partial payment applications. If requested by the Owner's Representative, provide sufficient substantiation for all or some items as necessary to determine the proposed schedule of values is a reasonable representation of the true cost breakdown of the Work. The schedule of values shall not be unbalanced to achieve early payment or over-payment in excess of the value of work or any other mis-distribution of the costs. If, in the opinion of the Owner's Representative, the schedule of values is unbalanced, Contractor shall reallocate components to achieve a balanced schedule acceptable to Owner's Representative.

8. SITE USAGE

Submit a proposed site staging plan, including but not limited to the location of office trailers, storage trailers and material laydown. Such plan shall be a graphic presentation (drawing) of the proposed locations; and, shall include on-site traffic modifications, and temporary utilities, as may be applicable.

G. Informational Submittals

1. SHOP DRAWING SCHEDULE

Prepare and submit a schedule indicating when shop drawings are required to be submitted to support the as-planned construction schedule. The submittal schedule shall allow sufficient time for preparation and submittal, review and approval, and fabrication and delivery to support the construction schedule.

2. CONSTRUCTION SCHEDULE

Prepare and submit construction schedules and monthly status reports as specified.

3. STATEMENTS OF QUALIFICATIONS

Provide evidence of qualification, certification, or registration, as required in the Contract Documents, to verify qualifications of licensed land surveyor, professional engineer, materials testing laboratory, specialty subcontractor, technical specialist, consultant, specialty installer, and other professionals.

4. HEALTH AND SAFETY PLANS

When specified, prepare and submit a general company Health and Safety Plan (HSP), modified or supplemented to include job-specific considerations.

5. CONSTRUCTION PHOTOGRAPHY AND VIDEOGRAPHY

Provide periodic construction photographs and videography as specified – including but not limited to preconstruction photographs and/or video, monthly progress photos and/or video and post-construction photographs and/or video.

6. WORK PLANS

Prepare and submit copies of all work plans needed to demonstrate to the Owner that Contractor has adequately thought-out the means and methods of construction and their interface with existing facilities.

7. OUTAGE REQUESTS

Provide sufficient notification of any outages required (electrical, flow processes, etc) as may be required to tie-in new work into existing facilities. Unless specified otherwise elsewhere, a minimum of seven calendar days notice shall be provided.

8. PROPOSED TESTING PROCEDURES

Prepare and submit testing procedures it proposes to use to perform testing required by the various technical specifications.

9. TEST RECORDS AND REPORTS

Provide copies of all test records and reports as specified in the various technical specifications.

10. TEST AND START-UP REPORTS

Manufacturer shall perform all pre-start-up installation inspection, calibrations, alignments, and performance testing as specified in the respective Specification Section. Provide copies of all such test and start-up reports.

11. CERTIFICATIONS

- a. Provide various certifications as required by the technical specifications. Such certifications shall be signed by an officer (of the firm) or other individual authorized to sign documents on behalf of that entity.
- b. Certifications may include, but are not limited to:
  - 1) Welding certifications and welders qualifications
  - 2) Certifications of Installation, Testing and Training for all equipment
  - 3) Material Testing reports furnished by an independent testing firm
  - 4) Certifications from manufacturer(s) for specified factory testing

12. RECORD DRAWINGS

No later than Substantial Completion, submit a record of all changes during construction not already incorporated into drawings – in accordance with specification on Project Record Documents.

13. SUBMITTALS REQUIRED BY LAWS, REGULATIONS AND GOVERNING AGENCIES

Prepare and submit all documentation required by state or local law, regulation or government agency directly to the applicable agency. This includes, but is not limited to, notifications, reports, certifications, certified payroll (for projects subject to wage requirements) and other documentation required to satisfy all requirements. Provide to Owner's Representative one copy of each submittal made in accordance with this paragraph.

14. SUBMITTALS REQUIRED BY FUNDING AGENCIES

Prepare and submit all documentation required by funding agencies. This includes, but is not limited to segregated pay applications and change orders when required to properly allocate funds to different funding sources; and certified payrolls for projects subject to wage requirements. Provide one copy of each submittal made in accordance with this paragraph to the Engineer.

15. OTHER REQUIREMENTS OF THE TECHNICAL SPECIFICATION SECTIONS

Comply with all other requirements of the technical specifications.

16. WARRANTIES AND BONDS

Assemble a book(let) of all warranties and bonds as specified in the various technical specifications and in accordance with the specification on Warranties and Bonds and provide to the Owner's Representative.

17. CONTRACT CLOSE-OUT DOCUMENTS

Submit Contract documentation as indicated in the specification for Contract Close-out.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SUBMITTAL SCHEDULE

- A. Provide an initial submittal schedule at the pre-construction meeting for review by Owner and Owner's Representative. Incorporate comments from Owner or Owner's Representative into a revised submittal schedule.
- B. Maintain the submittal schedule and provide sufficient copies for review by Owner and Owner's Representative. An up-to-date submittal schedule shall be provided at each project progress meeting.

3.02 TRANSMITTALS

- A. Prepare separate transmittal sheets for each submittal. Each transmittal sheet shall include at least the following: the Contractor's name and address, Owner's name, project name, project number, submittal number, description of submittal and number of copies submitted.
- B. Submittals shall be transmitted or delivered directly to the office of the Owner's Representative, as indicated in the Contact Documents or as otherwise directed by the Owner's Representative.

3.03 PROCEDURES

A. ACTION SUBMITTALS

1. CONTRACTOR'S RESPONSIBILITIES

- a. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required). Coordinate with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. Extensions to the Contract Time will not be approved for the Contractor's failure to transmit submittals sufficiently in advance of the Work.
- b. The submittals of all shop drawings (including working drawings and product data) shall be sufficiently in advance of construction requirements to allow for possible need of re-submittals, including the specified review time for the Owner's Representative.
- c. No less than 15 calendar days will be required for Owner's Representative's review time for shop drawings and O&M manuals involving only one engineering discipline. No less than 30 calendar days will be required for Engineer's review time for shop drawings and O&M manuals that require review by more than one engineering discipline. Resubmittals will be subject to the same review time.
- d. Submittals of operation and maintenance data shall be provided within 30 days of approval of the related shop drawing(s).
- e. Before submission to the Owner's Representative, review shop drawings as follows:
  - 1) make corrections and add field measurements, as required
  - 2) use any color for its notations except red (reserved for the Engineer's notations) and black (to be able to distinguish notations on black and white documents)
  - 3) identify and describe each deviation or variation from Contract documents
  - 4) include the required Contractor's Certification statement
  - 5) provide field measurements (as needed)
  - 6) coordinate with other submittals
  - 7) indicate relationships to other features of the Work
  - 8) highlight information applicable to the Work and/or delete information not applicable to the Work
- f. Submit the following number of copies:
  - 1) Shop drawings (including working drawings and product data) – Submit no fewer than six, and no more than nine; five of which will be retained by the Owner's Representative and/or Owner's Representative. One of the above copies shall be submitted directly to the Owner's Representative for review.

- 2) Samples – three
  - 3) Site Usage Plan – three copies
  - 4) Schedule of values – four copies
  - 5) Payment application format – four copies
- g. If Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, provide written notice thereof to the Owner's Representative immediately; and do not release for manufacture before such notice has been received by the Owner's Representative.
- h. When the shop drawings have been completed to the satisfaction of the Owner's Representative and Owner's Representative, carry out the construction in accordance therewith; and make no further changes therein except upon written instructions from the Owner's Representative.

## 2. OWNER'S REPRESENTATIVE'S RESPONSIBILITIES

- a. Owner's Representative will not review shop drawings (including working drawings and product data) that do not include the Contractor's approval stamp. Such submittals will be returned to the Contractor, without action, for correction.
- b. Partial shop drawings (including working drawings and product data) will not be reviewed. If, in the opinion of the Owner's Representative, a submittal is incomplete, that submittal will be returned to the Contractor for completion. Such submittals may be returned with comments from Owner's Representative indicating the deficiencies requiring correction.
- c. If shop drawings (including working drawings and product data) meet the submittal requirements, Owner's Representative will forward copies to appropriate reviewer(s). Otherwise, noncompliant submittals will be returned to the Contractor without.
- d. Submittals which are transmitted in accordance with the specified requirements will be reviewed by the Owner's Representative within the time specified herein. The time for review will commence upon receipt of submittal by Owner's Representative.

## 3. REVIEW OF SHOP DRAWINGS (INCLUDING WORKING DRAWINGS AND PRODUCT DATA) AND SAMPLES

- a. The review of shop drawings, working drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
  - 1) as permitting any departure from the Contract requirements
  - 2) as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials

- 3) as approving departures from details furnished by the Owner's Representative, except as otherwise provided herein
- b. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- c. If the shop drawings (including working drawings and product data) or samples as submitted describe variations and indicate a deviation from the Contract requirements that, in the opinion of the Owner's Representative are in the interest of the Owner and are so minor as not to involve a change in Contract Price or Contract Time, the Owner's Representative may return the reviewed drawings without noting an exception.
- d. Only the Owner's Representative will utilize the color "RED" in marking submittals.
- e. Shop drawings will be returned to the Contractor with one of the following codes.

Code 1 – "APPROVED" – This code is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

Code 2 - "APPROVED AS NOTED" - This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 - "APPROVED AS NOTED/CONFIRM" - This combination of codes is assigned when a confirmation of the notations and comments is required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Owner's Representative within 15 calendar days of the date of the Owner's Representative's transmittal requiring the confirmation.

Code 4 - "APPROVED AS NOTED/RESUBMIT" - This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the entire package. This resubmittal is to address all comments, omissions and non-conforming items that were noted. Resubmittal is to be received by the Owner's Representative within 30 calendar days of the date of the Owner's Representative's transmittal requiring the resubmittal.

Code 5 – "NOT APPROVED" – This code is assigned when the submittal does not meet the intent of the contract documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the requirements of the contract documents.

Code 6 – “COMMENTS ATTACHED” – This code is assigned where there are comments attached to the returned submittal, which provide additional data to aid the Contractor.

Code 7 – “RECEIPT ACKNOWLEDGED (Not subject to Owner’s Representative’s Review or Approval)” – This code is assigned to acknowledge receipt of a submittal that is not subject to the Engineer’s review and approval, and is being filed for informational purposes only. This code is generally used in acknowledging receipt of means and methods of construction work plans, field conformance test reports, and health and safety plans.

Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

- f. **REPETITIVE REVIEWS:** Shop drawings, O&M manuals and other submittals will be reviewed no more than twice at the Owner’s expense. All subsequent reviews will be performed at the Contractor’s expense. Reimburse the Owner for all costs invoiced by Owner’s Representative for the third and subsequent reviews.

#### 4. ELECTRONIC TRANSMISSION

- a. **ACTION SUBMITTALS** may be transmitted by electronic means provided the following conditions are met:
  - 1) The above-specified transmittal form is included.
  - 2) All other requirements specified above have been met including, but not limited to, coordination by the Contractor, review and approval by the Contractor, and the Contractor’s Certification.
  - 3) The submittal contains no pages or sheets large than 11 x 17 inches.
  - 4) With the exception of the transmittal sheet, the entire submittal is included in a single file.
  - 5) The electronic files are PDF format (with printing enabled).
  - 6) In addition, transmit three hard-copy (paper) originals to the Owner’s Representative.
  - 7) The Owner’s Representative’s review time will commence upon receipt of the hard copies of the submittal.
  - 8) For Submittals that require certification, corporate seal, or professional embossment (i.e. P.E.s, Surveyors, etc) transmit at least two hard-copy originals to the Owner’s Representative. In addition, provide additional photocopied or scanned copies, as specified above, showing the required certification, corporate seal, or professional seal.

B. INFORMATIONAL SUBMITTALS

1. CONTRACTOR'S RESPONSIBILITIES

- a. Number of copies: Submit three copies, unless otherwise indicated in individual Specification sections
- b. Refer to individual technical Specification Sections for specific submittal requirements.

2. OWNER'S REPRESENTATIVE'S RESPONSIBILITIES

- a. The Owner's Representative will review each informational submittal within 15 days. If the informational submittal complies with the Contract requirements, Owner's Representative will file for the project record and transmit a copy to the Owner. Owner's Representative may elect not to respond to Contractor regarding informational submittals meeting the Contract requirements.
- b. If an informational submittal does not comply with the Contract requirements, Owner's Representative will respond accordingly to the Contractor within 15 days. Thereafter, the Contractor shall perform the required corrective action, including retesting, if needed, until the submittal, in the opinion of the Owner's Representative, is in conformance with the Contract Documents.

3. ELECTRONIC TRANSMISSION

- a. INFORMATIONAL SUBMITTALS may be transmitted by electronic means providing all of the following conditions are met:
  - 1) The above-specified transmittal form is included.
  - 2) The submittal contains no pages or sheets large than 11 x 17 inches.
  - 3) With the exception of the transmittal sheet, the entire submittal is included in a single file.
  - 4) The electronic files are PDF format (printing enabled).
  - 5) For Submittals that require certification, corporate seal, or professional embossment (i.e. P.E.s, Surveyors, etc)) transmit two hard-copy originals to the Owner's Representative.

END OF SECTION 01300

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P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a professional engineer registered in the Commonwealth of Pennsylvania, and that he/she has been employed by

\_\_\_\_\_ to design  
(Name of Contractor)

\_\_\_\_\_  
(Insert P.E. Responsibilities)

In accordance with Specification Section \_\_\_\_\_ for the

\_\_\_\_\_.  
(Name of Project)

The undersigned further certifies that he/she has performed the said design in conformance with all applicable local, state and federal codes, rules and regulations; and, that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the

\_\_\_\_\_  
(Insert Name of Owner)

or Owner's representative within seven days following written request therefor by the Owner.

\_\_\_\_\_  
P.E. Name

\_\_\_\_\_  
Contractor's Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
Title

\_\_\_\_\_  
Address

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SECTION 01370

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit a Schedule of Values allocated to the various portions of the work, within 21 days after the effective date of the Agreement.
- B. Upon request of the Owner's Representative, support the values with data which will substantiate their correctness.
- C. The accepted Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Contract Provisions are included in Section 00100.
- B. Application for Payment is included in Section 01026.

1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Type schedule on an 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper furnished by the Owner; Contractor's standard forms and automated printout will be considered for approval by the Owner's Representative upon Contractor's request. Identify schedule with:
  - 1. Title of Project and location.
  - 2. Project number.
  - 3. Name and Address of Contractor.
  - 4. Contract designation.
  - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Identify each line item with the number and title of the respective Section.
- D. For each major line item list sub-values of major products or operations under the item.

- E. For the various portions of the work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by the Owner's Representative.
    - b. The total installed value.
- F. The sum of all values listed in the schedule shall equal the total Contract Sum.

#### 1.04 SUBSCHEDULE OF UNIT MATERIAL VALUES

- A. Submit a sub-schedule of unit costs and quantities for:
  - 1. Products on which progress payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item in the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
  - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
  - 2. Copies of invoices for component material shall be included with the payment request in which the material first appears.
  - 3. Paid invoices shall be provided with the second payment request in which the material appears or no payment shall be allowed and/or may be deleted from the request.
- E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01370

**SCHEDULE OF VALUES DETAILED BREAKDOWN**

**Project Title:**  
**Location:**  
**Contract Price:**

**Contractor:**  
**Type of Contract:**

**Phase:** \_\_\_\_\_

Item Number	Description	Quantity	Unit Type	Material Unit Cost	Labor Unit Cost	Total Cost Per Unit	Total Amount
<b>Total Contract Price \$</b>							

I certify that the above is an accurate breakdown of the Contract Price

Contractor Representative \_\_\_\_\_

Date:

The above breakdown has been checked and reviewed as a fair distribution.

CDM Architects, Inc.  
 Representative \_\_\_\_\_

Date:

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SECTION 01500  
TEMPORARY FACILITIES

PART 1 GENERAL

1.01 SITE OFFICES

- A. Contractor shall provide offices to be used for the duration of the Contract for its own personnel and its subcontractors on the job site at locations approved by the Owner's Representative or Owner. Such offices shall be maintained in a clean, orderly condition. An authorized representative shall be present at all times the Work is in progress. Instructions received there from the Owner's Representative shall be considered as delivered to the Contractor.

1.02 TEMPORARY POWER AND LIGHT

- A. The Electrical Contractor may use available power within the facility to meet the project needs.
- B. Provide grounded extension cords. Use heavy duty cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if more than one length is required.
- C. Provide general service incandescent lamps as required for adequate illumination. Provide guard cages or tempered glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

1.03 SANITARY FACILITIES

- A. Existing toilet facilities will be made available to the Contractor during the performance of the work. General Contractor shall thoroughly clean these facilities and leave them in a satisfactory condition at the completion of the work or at other times when directed by the Owner's Representative. The Owner reserves the right to withdraw permission for the Contractor's use at any time.

1.05 FIRE EXTINGUISHERS

- A. General Contractor shall provide portable UL-rated, Class A fire extinguishers for site offices and similar spaces. In other locations, provide portable UL-rated Class ABC dry chemical extinguishers or a combination of NFPA recommended Classes for the exposure. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01500

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SECTION 01700  
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section specifies administrative, verification and procedural requirements for project closeout, including but not limited to:
  - 1. Final cleaning (Section 01710).
  - 2. Project Record Documents (Section 01720).
  - 3. Warranties, guarantees, and bonds (Section 01740)
  - 4. Permit close-outs including Certificate of Occupancy or Certificate of Completion.

1.02 CLOSEOUT PROCEDURES

- A. Provide all deliverables as specified, prior to submitting the final payment application.
- B. Provide submittals to Owner's Representative that are required by governing or other authorities having applicable jurisdiction including but not limited to permit close out information, certificates of occupancy, etc.
- C. Submit Application for Final Payment identifying total adjusted Contract Sum, previous payments and sum remaining due, following submittal and approval of Record Documents and Record Drawings.

1.03 FINAL CLEANING

- A. Contractor to complete final cleaning prior to submittal of the final application for payment.
- B. Contractor to comply with requirements as specified in Section 01710.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01700

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## SECTION 01710

### CONSTRUCTION WASTE MANAGEMENT AND CLEANING

#### PART 1 GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Execute cleaning and disposal of waste materials, debris and rubbish during construction.
- B. Final cleaning of project site.

##### 1.02 RELATED REQUIREMENTS

- A. General Conditions of the Contract: Cleaning Up.
- B. Closeout procedures are included in Section 01700.
- C. Individual Specifications Sections: Specific cleaning for product or work.

##### 1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations and anti-pollution laws.

##### 1.04 DESCRIPTIONS

- A. The Contractor is responsible for cleanup of all waste materials, debris and rubbish from his work and the work of his subcontractors. Maintain areas under Contractor's control free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Dumpster and Covered Containers for deposit of debris and rubbish shall be provided by the Contractor including periodic disposal of accumulations or extraneous materials. Separate dumpsters will be provided for each type of recyclable material. Contractor will participate in this program and will separate his recyclable materials into each dumpster. Offending Contractors will be back-charged for time spent removing improperly sorted and disposed of materials.
- C. The Contractor shall in addition to the requirements of this section provide for the removal of all masonry debris and clean up of all masonry debris as a result of the masonry operation.
- D. The Contractor shall include a clean-up line item in their schedule of values.
- E. Removal from site of all demolition debris will be by the contractor performing the demolition activity.

#### PART 2 PRODUCTS

## 2.01 CLEANING PRODUCTS

- A. USE ONLY those materials which will not create hazards to health or property and which will not damage finishes and surfaces.
- B. In order to control excess dust, the Contractor shall provide adequate supply of proper dust control additives / compounds. This dust control compound shall be utilized and made available for sweeping operations.
- C. USE ONLY materials and methods recommended by manufacturer of material being cleaned.

## PART 3 EXECUTION

### 3.01 DURING CONSTRUCTION

- A. Execute daily cleaning, or as often as needed, to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris resulting from construction operations.
- B. Dispose of waste materials, cartons, crating, debris and rubbish at designated waste receptor provided by the Contractor (i.e. dumpster, truck, etc.) and which shall be disposed of at legal disposal areas away from the site.
- C. The Contractor shall coordinate and maintain a clean project site.

### 3.02 DISPOSAL

- A. Unless stated otherwise, the Contractor will remove collected waste materials, debris and rubbish from site as soon as dumpster/truck is full and dispose of off-site, in a lawful manner. This project requires that recyclable refuse materials be recycled when possible.

### 3.03 FINAL CLEANING

- A. Prior to final cleaning the Contractor shall remove all debris, extra material etc. to the dumpsters. The Contractor will provide final cleaning of the site.
- B. The Contractor shall clean Project site, yard and grounds, in areas disturbed by demolition activities, including landscape development areas, of rubbish, waste material, litter and other foreign substances. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved to a smooth, even textured surface.

END OF SECTION 01710

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SCOPE

- A. The Contractor shall keep and maintain, at the job site, a copy of contract documents, marked up to indicate all changes made during the course of a project, as specified herein.

1.02 RELATED REQUIREMENTS

- A. Contract close-out submittals are included in Section 01700.
- B. Warranties and bonds are included in Section 01740.
- C. Record shop drawings are included in Section 01300.

1.03 REQUIREMENTS INCLUDED

- A. Contractor shall maintain a record copy of the following documents, marked up to indicate all changes made during the course of a project:

- 1. Contract Drawings
- 2. Specifications

- B. Contractor shall assemble copies of the following documents for turnover to the Owner's Representative at the end of the project, as specified.

- 1. Field Orders, Change Orders, Design Modifications, and RFIs
- 2. Field Test records
- 3. Permits and permit close-outs (final approvals)
- 4. Certificate of Occupancy or Certificate of Completion, as applicable
- 5. Laboratory test reports (e.g., bacteriological and primary & secondary water quality)
- 6. Certificates of Compliance for materials and equipment
- 7. Samples

- C. RECORD DRAWINGS

- 1. The Contractor shall annotate (mark-up) the Contract Drawings to indicate all project conditions, locations, configurations, and any other changes or deviations that vary from the original Contract Drawings. This requirement includes, but is not limited to, buried or

concealed construction, and utility features that are revealed during the course of construction. Special attention shall be given to recording the locations (horizontal and vertical) and material of all buried utilities that are encountered during construction – whether or not they were indicated on the Contract Drawings. The record information added to the drawings may be supplemented by detailed sketches, if necessary, clearly indicating, the WORK, as constructed.

2. These annotated Contract Drawings constitute The Contractor's Record Drawings and are actual representations of as-built conditions, including all revisions made necessary by change orders, design modifications, requests for information and field orders.
3. Record drawings shall be accessible to the Owner and Owner's Representative at all times during the construction period.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 MAINTENANCE OF RECORD DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
  1. Provide files and racks for storage of the record documents.
  2. Provide locked cabinet(s) or secure storage space for storage of samples.
- B. File documents and samples in accordance with Construction Specifications Institute (CSI) format.
- C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and sample available for inspection by the Owner's Representative or Owner at all times.

### 3.02 MARKING METHOD

- A. Use the color *Red* (indelible ink) to record information on the Drawings and Specifications,
- B. Label each document "PROJECT RECORD" in neat large printed letters.
- C. Unless otherwise specified elsewhere, notations shall be affixed to hardcopies of documents.
- D. Record information contemporaneously with construction progress.
- E. Legibly mark drawings with as-built information:
  1. Elevations and dimensions of structures and structural elements.

2. All underground utilities (piping and electrical), structures, and appurtenances
  - a. Changes to existing structure, piping and appurtenance locations.
  - b. Record horizontal and vertical locations of underground structures, piping, utilities and appurtenances, referenced to permanent surface improvements.
  - c. Record actual installed pipe material, class, size, joint type, etc

### 3.03 RECORD INFORMATION COMPILATION

- A. Do not conceal any work until the required information is acquired.
- B. Items to be recorded include, but are not limited to:
  1. Location of internal utilities and appurtenances concealed in the construction – referenced to visible and accessible features.
  2. Field changes of dimensions and/or details
    - 1) Interior equipment and piping relocations.
    - 2) Architectural and structural changes, including relocation of doors, windows, etc.
    - 3) Architectural schedule changes.
- C. Changes made by Field Order, Change Order, design modification, and RFI.
- D. Details not indicated on the original Contract Drawings.

### 3.04 SUBMITTAL

- A. Upon substantial completion of the WORK and prior to final acceptance, the Contractor shall finalize and deliver a complete set of Record Drawings to the Owner's Representative conforming to the construction records of the Contractor. The set of drawings shall consist of corrected and annotated drawings showing the recorded location(s) of the WORK. Unless specified otherwise elsewhere, Record Drawings shall be in the form of a set of prints with annotations carefully and neatly superimposed on the drawings in red.
- B. Upon substantial completion of the WORK and prior to final acceptance, the Contractor shall finalize and deliver a complete set of Record Documents to the Owner's Representative conforming to the construction records of the Contractor. The set of documents shall consist of corrected and annotated documents showing the as-installed equipment and all other as-built conditions not indicated on the Record Drawings.
- C. The information submitted by the Contractor into the Record Drawings and Record Documents will be assumed to be correct, and the Contractor shall be responsible for the accuracy of such information, and shall bear the costs resulting from the correction of incorrect data.

- D. Delivery of Record Drawings and Record Documents to the Owner's Representative will be a prerequisite to Final payment.
- E. The Contractor shall maintain a copy of all books, records, and documents pertinent to the performance under this Agreement for a period of five years following completion of the contract.

END OF SECTION 01720

## SECTION 01740

### WARRANTIES AND BONDS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

##### 1.02 RELATED WORK

- A. General closeout requirements are included in Section 01700 Project Closeout.
- B. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections.

##### 1.03 SUBMITTALS

- A. Submit written warranties to the Owner prior to the date fixed by the Owner's Representative for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the work, or a designated portion of the work, submit written warranties upon request of the Owner.
- B. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Owner within 15 days of completion of that designated portion of the Work.
- C. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents and sized to receive 8-1/2-in by 11-in paper.
- D. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the Section in which specified and the name of the product or work item.
- E. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address and telephone number of the installer, supplier and manufacturer.
- F. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the project title or name and the name, address and telephone number of the equipment supplier.
- G. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

#### 1.04 WARRANTY REQUIREMENT

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the contract Documents.
- F. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.
- G. Separate Prime Contracts: Each Prime Contractor is responsible for warranties related to its own Contract.

#### 1.05 MANUFACTURERS CERTIFICATIONS

- A. Where required, the Contractor shall supply evidence, satisfactory to the Architect, that the Contractor can obtain manufacturers' certifications as to the Contractor's installation of equipment.

#### 1.06 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

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PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01740

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SECTION 15950

GAS MONITORING SYSTEM

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Provide all labor, tools, equipment, accessories, and installation materials required to install a complete operational gas monitoring system, including sequence of operations to control existing HVAC equipment within each zone as specified in this Section and as shown on the Drawings. This Specification is incomplete as a standalone document, and shall incorporate all information contained on the HVAC Drawings (H Series) and supplemental Reference Drawings (R Series). Additionally, this scope of work shall include any/all system components, power circuits, communication wiring, and installation labor required to furnish and install a complete operational gas monitoring system and sequence of operations, even if not identified in the contract documents. The following systems are included:
1. Bus Maintenance and Storage Building:
    - a. Methane (CH<sub>4</sub>) gas monitoring system.
    - b. Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) gas monitoring system.
    - c. Retrofit of existing HVAC equipment controls to support the sequence of operations.
    - d. Add alternate price for auto calibration system.
- B. The new gas monitoring system shall consist of the following components including but not limited to a portable control console with wheels to house the central computer, monitor screen, keyboard, and UPS; remote monitor screen and keyboard installed in the Manager's Office; central control panel to house all starters, contactors, circuit breakers, terminal strips, transformers, dry contact closures, relays, HOA switches, auto test switches, normal disable switches, indicating lights, etc.; six zone control I/O panels; zone sensors and transmitters; and all power circuits, conduits, control wiring, communication wiring, hard wire interlocks, relays. The add alternate auto calibration system shall consist of the following components including but not limited to two wall mounted gas cylinder support racks; one Size A cylinder of Zero Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; one Size A cylinder of 2.5% Methane Span Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; a central control panel to govern the auto calibration system and record data; six zone control gas panels; and all tubing, isolation valves, solenoid valves, piping supports, conduit, control wiring, communication wiring, and relays.
- C. The gas monitoring system manufacturer shall have minimum, proven 10 years experience supplying specified systems and minimum, proven 10 completed installations. The manufacturer shall be capable of providing onsite service with factory trained personnel. The manufacturer shall be capable of providing owner/operator training. The manufacturer shall be capable of supplying all equipment used to check or calibrate the field installed sensor and transmitters.

- D. The manufacturer shall have a branch office facility or authorized installer within 2 hours driving distance of the project site that has existed for at least 5 years, with technical staff and complete spare parts inventory and test and diagnostic equipment to keep systems in operation 24 hours per day, 7 days per week. They shall have emergency service available in the local area and on-call emergency service 24 hours per day, 7 days per week with a maximum response time of 2 hours.
- E. The manufacturer shall be fully licensed at the time of bid to do business in the job site area for each type of subsystem.
- F. The manufacturer shall provide systems that are UL approved as intrinsically safe or meet the requirements of NFPA-72A, 72B, 72C, and 72D. All systems shall be listed by UL. Each component of the system shall be, where applicable, UL listed for the intended service.
- G. The gas monitoring systems and HVAC controls shall be installed by competent mechanics, technicians, and electricians in the direct employ of the gas monitoring system manufacturer, or shall be trained and approved by the manufacturer in writing to perform the Work.
- H. The Installing Contractor shall have minimum, proven 5 years experience installing specified systems and minimum, proven 5 completed installations.
- I. All materials and equipment used shall be standard components, regularly manufactured for this and/or other systems, and not custom designed especially for this project. All systems and components used for this project shall have been thoroughly tested by the manufacturer and proven in actual previous projects. Prototype equipment and software shall not be permitted.
- J. The gas monitoring systems and HVAC control systems shall consist of all hardware, software, control panels, and instrumentation, including but not limited to gas detection sensors, relays, switches, indicating lights, and other accessory equipment along with all power circuits and communication wiring to fill the intent of the specifications to provide a complete operable system. All gas detection sensors shall be fully proportioning.
- K. The Manufacturer and Installing Contractor shall review and study all Reference drawings and existing HVAC equipment controls to become familiar with all existing equipment, system operations and sequences, and to verify the quantities and types of circuit breakers, motor starters, relays, HOA switches, test switches, dampers, operators, etc. required to provide complete operating systems. The Manufacturer and Installing Contractor shall review existing equipment appurtenances and installed system devices to identify any missing components required to provide a complete operating system in compliance with the equipment manufacturer's installation requirements, and as shown on Reference drawings and specified in the Sequence of Operations. Failure to identify missing components required to provide complete operating systems shall not relieve the Manufacturer or Installing Contractor from any responsibility to provide complete systems.
- L. In general, corrections or comments or lack thereof, made relative to submittals during review shall not relieve the Contractor from compliance with the requirements of the Drawings and Specifications. Submittals are for review of general conformance with the design concepts of the project, and general compliance with the contract documents. The Installing Contractor is responsible for the final design conforming and correlating to all sequences and set points, and performing the work in a safe and satisfactory manner. The Installing Contractor is responsible to deliver a complete operational system in conformance with the Contract documents.

## 1.02 SUBMITTALS

- A. Submit the following, in accordance with Section 01300 and other Division 1 specifications:
1. A complete description of the gas monitoring system including controls and interlocks with each piece of existing HVAC equipment, sequences of operation, and control set points. The descriptions shall include and reference a schematic diagram of each controlled system. Provide a sequence of operations for each sensor zone to explain the operation of existing HVAC equipment being controlled by the gas monitoring system. For add alternate auto calibration system, provide separate sequence of operation.
  2. Submittal sketches shall be clearly highlighted and labeled to identify the equipment tags, alarms, and set points being submitted. Submittals not clearly highlighted are subject to rejection by the reviewing Owner's Representative. The Owner's Representative will not be responsible to interpret submittals that are not properly highlighted and labeled.
  3. Control drawings with power circuits, composite control wiring, and communication wiring schematics, including bill of material and description of operation for all systems. Wiring diagrams shall differentiate between devices supplied with equipment from the manufacturer, devices furnished and installed in the field by the Installing Contractor, and existing devices installed in the building or existing HVAV equipment. For add alternate auto calibration system, separate control drawings and gas piping diagrams shall be submitted.
  4. Panel layouts for all central panels and local zone I/O panels. For add alternate auto calibration system, provide separate Gas Control Panel layouts.
  5. Operator workstation screen graphics and displays on 8.5 by 11-in paper in color, as they will be seen on the screen. Submit links from screen to screen. A basic template indicating the screen formats and list of screens shall be submitted and approved, prior to preparing the actual displays. All screens are to be approved prior to system installation.
  6. Samples of forms and logs used to record calibration data and archived history.
  7. Provide a recommended list of spare parts for minimum 2 years service.
  8. Software licensing and user agreements will be submitted for approval with the shop drawings for the equipment using the software. The submittal shall be a copy of the final agreement document that is to be signed.
  9. Complete listing of deviations from the specified systems, design shown on the Drawings, or existing controls shown in the Reference Drawings with explanation for each deviation.
  10. All submittals shall contain a statement that this specification, Design Drawings, Reference Drawings, and requirements contained in Division 1 specifications have been read and complied with. The certification statement shall be made by all of the following that are applicable; the Manufacturer, Installing Contractor, and all sub-contractors. The statement shall be an individual statement for each party involved, and shall be included with every submittal and re-submittal.

11. Proof of 10 years manufacturing experience, 10 completed projects, and licensure to install. Include written statement demonstrating capability to provide onsite service with factory trained personnel, owner/operator training, and all equipment used to check or calibrate the field installed sensor and transmitters.
12. Proof of 5 years installation experience and licensure to install.
13. Operating and maintenance manuals shall be provided in hard copy and digital format in accordance with Section 01300. An overall site arrangement shall depict the approximate physical positioning of sensors, alarms, automatic calibration stations, and the central monitoring station's computer cabinet. One-line wiring diagrams shall be included with recommended cable, conduit and calibration tubing.
14. Two complete copies of the submittal shall be sent to the local Authority Having Jurisdiction and the Owner's Underwriter for review and comment. Work shall not commence without written authorization from the Owner confirming their comments.

#### 1.03 ENGINEERING SERVICES

- A. When engineering services are required to be provided by the Installing Contractor, the Installing Contractor shall retain a licensed professional engineer to perform the services subject to the approval of the manufacturer. The engineer shall be licensed at the time the work is performed and in the State in which the project is located. If the State issues discipline specific licenses, the engineer shall be licensed in the applicable discipline. In addition, the engineer shall have minimum five years experience in the type of work being provided.
- B. All work is to be done according to the applicable regulations for professional engineers, to include signing, sealing, and dating documents. When submittals are required by a professional engineer, in addition to state required signing and sealing, a copy of the current wallet card or wall certificate indicating the date of expiration shall be included with the submittal.

#### 1.04 COORDINATION

- A. The Manufacturer and Installing Contractor shall both assume full responsibility for the coordination of the work with existing conditions and equipment. The gas monitoring system Manufacturer shall furnish, supervise, and test the field installed devices, and control and communication wiring as part of system startup, and shall be responsible to coordinate the installation with the Installing Contractor. The Installing Contractor shall be responsible for field installation, coordinating with the Owner, and initial start-up.
- B. The gas monitoring system Manufacturer shall review the Design Drawings and Reference Drawings, and shall provide design review comments regarding sensor locations, panel locations, and all system components for compliance with industry standards, applicable codes, and manufacturer's recommendations. Revisions to the Design Drawings shall be submitted to the Owner's Representative for approval prior to bid acceptance. Necessary system revisions submitted after bid award shall be performed at no cost to Owner.

- C. Coordinate sensor and equipment locations with existing HVAC equipment and building conditions to maintain recommended clearances.

#### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver all equipment as factory-assembled units, to the extent allowable by shipping limitations, with protective crating and covering. All equipment shipped that is exposed to outdoor conditions, such as on a flat bed truck, shall be protected during transit. All equipment shall be protected from moisture, road salt, dirt, and stones or other materials thrown up from other vehicles. Electrical components shall be protected as above, but with special attention to moisture. The method of shipment protection shall be defined in the submittals.
- B. Delivery schedule of all equipment shall be coordinated with the Owner. Equipment ready for shipment prior to the agreed upon shipping date shall be stored without cost to the Owner.
- C. All materials shall be suitably packed for shipment and long term storage. Spare parts shall be shipped to Owner immediately following Owner acceptance of installation. Each package shall be labeled to indicate the project and package contents using equipment numbers on the containers. All materials shall be stored in a covered dry location off of the ground. When required by the manufacturer, materials shall be stored in a temperature-controlled location at no cost to Owner.
- D. All materials shall be inspected for size, quality, and quantity against approved shop drawings upon delivery.
- E. Instruction for the servicing and startup of equipment in long term or prolonged storage shall accompany each item.

#### 1.06 SPARE PARTS

- A. Spare parts shall include all specialty items and tools on the manufacturer's standard list of spare parts that are unique to the equipment manufacturer. All specialty items shall be provided at no cost to Owner.
- B. In addition to specialty items, the following spare parts shall be provided:
  - 1. Three CH<sub>4</sub> sensors to be shipped to Owner immediately following Owner acceptance of installation.
  - 2. One combination CO/NO<sub>2</sub> sensor and one NO<sub>2</sub> sensor to be shipped from factory to Owner upon Owner request at any time during the warranty phase.
  - 3. One complete replacement set of indicating lights and fuses for each panel.
  - 4. One backup copy of final installed system software on set of CDs.
  - 5. One gas monitoring system software upgrade for the Owner to use in modifying software during system revisions or expansion that occurs within two years of final acceptance.

6. For add alternate auto calibration system, one isolation and one solenoid valve per gas type installed in a gas control panel, 100 feet of sensor hose, and hardware to make 5 hose joints.
- C. Pack spare parts in containers suitable for extended storage without deterioration of the parts. Containers shall be clearly labeled designating contents, pieces of equipment for which intended and equipment identification numbers.

#### 1.07 WARRANTIES AND WARRANTY SERVICE

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents, and shall be in addition to, and run concurrent with, other warranties made by the Manufacturer and/or Installing Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty, executed by the manufacturer, agreeing to repair or replace system components that fail in materials or workmanship within special warranty period. The gas monitoring system warranty shall constitute free repair or replacement of any failed part when returned to the factory postage prepaid with explanation of problem. Special warranty shall commence with Owner's Representative approval during system commissioning. Each gas monitoring system Software License shall provide for perpetual usage on the original central computer, transferrable to another Owner location.
  1. IR sensor and transmitter failures shall be replaced and installed by the manufacturer or Installing Contractor at no charge for a period of 10 years after Owner's Representative approval and commissioning.
  2. Electronic failures inside manufacturer's control panels, circuit boards, and memory storage shall be replaced and installed by the manufacturer or Installing Contractor at no charge for a period of 5 years after Owner's Representative approval and commissioning.
  3. Electrical wiring and device failures inside manufacturer's control panels, transformers, starters, relays, HOA switches, test switches, indicating lights, etc. shall be replaced and installed by the manufacturer or Installing Contractor at no charge for a period of 2 years after Owner's Representative approval and commissioning.
  4. Updates to the manufacturer's gas monitoring system software shall be provided and installed by the manufacturer or Installing Contractor at no charge for a period of 2 years after Owner's Representative approval and commissioning, in the event that software updates could impact performance of the system.
- C. Warranty Start-Up Service: The manufacturer shall provide the following minimum warranty start-up service to initialize, calibrate, and stabilize all sensors to achieve repeatable accuracy within specified drift tolerances. If additional calibration is required to achieve repeatable accuracy within specified drift tolerances, the manufacturer shall provide additional start-up services at no cost to Owner.
  1. All sensors shall be calibrated daily during the first week of operation.
  2. After one week, all sensors shall be calibrated weekly for the next one month of operation.

3. After one month, the system may be submitted for Owner's Representative approval and commissioning, and all sensors shall be calibrated monthly for the next two months of operation.
4. After three months, all sensors shall be calibrated quarterly for the remainder of the first year of operation. Each quarterly service visit shall include an onsite visit by the manufacturer's representative to inspect the overall system, examine historical files, test critical alarms, troubleshoot anomalies observed by the Owner, recommend courses of action, re-train the Owner's personnel, and review system features. The Owner shall provide access to the system via LAN and phone line, as needed for diagnosing problems, maintaining files, etc. with access by the manufacturer only under express permission of the Owner's knowledge and cooperation.

## PART 2 PRODUCTS

### 2.01 GAS MONITORING SYSTEM

- A. The new gas monitoring system (GMS) shall be a stand-alone hazardous gas monitoring system with multiple alarm levels consisting of the following components, including but not limited to, a portable control console with wheels to house the central computer, monitor screen, keyboard, and UPS; remote monitor screen and keyboard installed in the Manager's Office; central control panel to house all starters, contactors, circuit breakers, terminal strips, transformers, dry contact closures, relays, HOA switches, auto test switches, normal disable switches, indicating lights, etc.; six zone control I/O panels; zone sensors and transmitters; and all power circuits, conduits, control wiring, communication wiring, hard wire interlocks, and relays. The GMS shall be Rel-Tek Millennia-DX control system with DXcaliber zone I/O control panels, Intrinsic Safety Barriers, and Rel-Tek sensors; or MSA Model 10K control system with Allen-Bradley ControlLogix programmable logic controller (PLC), ModCon 75 zone control I/O panels, and Ultima X3 Series Gas Monitor Sensor/Transmitters, or approved equal by Industrial Scientific.
- B. The GMS central computer and central control panel shall be located in the existing Electrical Room, and the remote monitor screen and keyboard shall be located in the Manager's Office as shown on the Design Drawings. The GMS central computer and central control panel shall provide combustible gas monitoring, threshold alarming, audio/visual indicators, and building control signals to operate existing HVAC equipment, doors, etc. while displaying, trending, logging, and archiving historical gas levels in the facility.
- C. The Bus Maintenance and Storage Building shall be monitored using six zones as shown on the Design Drawings. Each zone shall be provided with a zone I/O control panel, sensors, and transmitters to detect methane, carbon monoxide, and nitrogen dioxide per sensor locations shown on the Design Drawings. Each zone shall have a sequence of operations designed to control existing HVAC equipment within its zone in response to various levels of gas detection.
- D. The add alternate auto calibration system shall consist of the following components including but not limited to two wall mounted gas cylinder support racks; one Size A cylinder of Zero Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; one Size A cylinder of 2.5% Methane Span Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; a central control panel to govern the auto calibration system and record data; six zone control gas panels; and all tubing, isolation valves, solenoid valves, piping supports, conduit, control wiring, communication wiring, and relays.

- E. Installed systems shall comply with the following reference standards and approvals, or shall be UL approved intrinsically safe:
  - 1. NFPA 30A - Motor Fuel Dispensing Facilities and Repair Garages.
  - 2. NFPA 70 - National Electrical Code.
  - 3. The explosion-proof infrared monitor shall have Class I, Division 1 & 2, Groups A, B, C, and D; Class II, Division 1, Groups F & G; Class III approval
  - 4. The explosion-proof Remote Sensor shall have Class I, Division 1 & 2, Groups A, B, C, and D, Class II, Division 1, Groups F & G; Class III approval
- F. Hazardous areas are defined as the vertical space within 18 inches of the roof deck. In this area, only explosion proof devices or UL approved intrinsically safe devices with a Class I, Div 2, Group D (NFPA-70) classification shall be installed. All conduit installed within this area shall be sealed for explosion proof service. All control devices, conduit, and wiring shall be rated to meet or exceed this electrical area hazard classification or shall be UL approved intrinsically safe.
- G. Gas sensor placement shall comply with all industry standards, manufacturer's recommendations, and a US national alt-fuel bus garage precedence, wherein each methane sensor shall not be expected to cover more than 1,000 square feet of floor grid space and shall provide overlapping coverage with 98-100% coverage of all floor grid space. In addition, the following shall apply, depending on the fuels employed. CNG (compressed natural gas, consisting of 90-100% methane plus 0-10% ethane) fuel – sensors shall be installed not more than eight inches below roof deck.

## 2.02 CENTRAL COMPUTER AND CONTROL PANEL

- A. One portable control console with wheels shall be provided to house the central computer, monitor screen, keyboard, and UPS. The control console shall neatly organize the components to allow operator interface from the front side. The back side shall organize all power and communication connection services and interconnecting control wiring. The console shall provide Touch Screen operator interface, local power supply, one hour UPS battery backup, connection to the Owner's LAN computer system, storage space for system manuals, and enough work space for keyboard and O&M manual.
- B. The central control panel may be integral to the central computer, built into the control console, or remote within ten feet with interconnecting wiring so that the system monitor may be viewed.
- C. The GMS central computer or control panel shall consist of a PC using a Windows 7 or XP-Pro operating system or newer, and shall include a 19" or larger LCD touch screen monitor, telemetry driver, and two 30-minute UPS's, all packaged in a free-standing console cabinet. Software shall be an in-house product developed by the manufacturer or commercially available HMI visualization product, and shall be hard-coded for high speed. Telemetry shall be either 19.2KB over a twisted-pair cable with communication distances of up to one mile without repeaters or ModBus communication cables with distances up to 3000 feet or ModBus TCP/IP over CAT 5E, or Multi-Mode fiber optics. Maximum system response time shall not exceed 5 seconds from time of gas detection to alarm activation. Alarm and control logic shall be audible/visual in nature. Data logging shall include all sensors and alarms with time/date stamp,

printable and off-loadable to Excel. All tools that enable the Owner to reconfigure screens, alarms, logs, etc. shall be included. Software and computer shall be supported by the GMS supplier's technical staff. All telemetry components shall be protected against a 1,500 watt, 1-ms data-line transient.

- D. The central computer and control panel shall be sized for this project and future expansion to accommodate a minimum of 16 building zones, 16 zone I/O control panels, 192 sensors, HVAC equipment controls to support the sequence of operations within 16 similarly sized zones, and interface to two fire alarm systems.
- E. The central control panel shall house all starters, contactors, circuit breakers, terminal strips, transformers, dry contact closures, relays, HOA switches, auto test switches, normal disable switches, indicating lights, etc. required to control the existing HVAC equipment inside the six building zones per the sequence of operations. The control panel shall be installed inside the central control console or shall be a wall mounted NEMA 12 enclosure rated for the electrical area classification within 10 feet of the console. All connections shall be made using rail mounted terminal blocks, organized by input/output type. Each device or alarm circuit shall be hardwired to the local I/O control panels using dry contact closures, two twisted pair digital communications cables or standard ModBus communication cables. Operating software shall be Windows based using either Millennia software on a PC computer or a system designed around a Rockwell Automation Industry Allen-Bradley ControlLogix programmable logic controller (PLC). Systems shall have a BacNet interface for connection to the existing Fire Alarm panels. All system components shall be UL approved. Refer to Drawings R-1 through R-9 which illustrates the existing relay logic used to control the existing HVAC equipment. The Manufacturer and Installing Contractor shall field verify all existing relay logic and HVAC equipment relays for integration into the new GMS sequences.
- F. The console's monitor at the Central Monitoring Station shall incorporate a color touch screen interface showing system graphics of the overall system components layout; six separate building zones with I/O control panels, sensor locations, and identification tags; sensor model, gas being monitored, and operating status for each sensor; operating and alarm set points for each sensor; alarm status; fault status; and communication status. The local interface shall be capable of inhibiting input and output devices, adjusting operating and alarms set points of sensors, and overriding HVAC equipment sequence of operations (subject to password access restrictions). Additional graphic screens shall be provided to interface with alarms, fault histories, trend displays, and maintenance records.
- G. A second remote monitor screen and keyboard shall be installed in the Manager's Office.
- H. GMS networking shall include LAN hub access links for adding remote workstations and for remote interrogation over a phone line or the Internet. The Owner shall provide the location of the tie-in point and maintain the LAN. The Installing Contractor shall furnish and install interconnecting communication wiring and conduit from the Owner's designated LAN connection point to the installed gas monitoring system devices.
- I. Means for factory dial-up interrogation of the GMS via phone line or Internet shall be provided, extendable to the Owner's usage as requested. The Owner shall permit the manufacturer access through firewall security barriers, for agreed purposes, times, and durations.

- J. The entire GMS shall be supported for one hour of operation following a total loss of main power. The Owner's engine-generator on site will provide continuing emergency 120VAC power within five minutes of loss of mains power via an existing electrical panel circuit, and provide GMS system power until the main power is restored. The Installing Contractor shall furnish and install the backup power circuit and conduit from the Owner designated source to the GMS. In the event the system is required to shut down completely, the central monitoring station's computer(s) shall not be injured, and files shall be maintained through orderly shutdown of the GMS computer.

## 2.03 ZONE I/O CONTROL PANELS

- A. Six zone Input/Output control panels shall be provided in a zonal arrangement per the Design Drawings for interfacing the central computer and control panel telemetry into building zones containing gas sensors, alarms, dry contact closures, controls, and existing HVAC equipment. Each panel shall be provided with a 115VAC power circuit from existing electrical panels, and one hour battery backup to support all panel loads. Intrinsic safety barriers or explosion proof conduits shall be included for connecting to the zone gas sensors. All sensor circuits shall be fail safe, without replaceable fuses. The same number of sensors serviced by a panel shall also be the number of dry contact auxiliary (switch) inputs, and control relays (SPDT, 10Amp, 110VAC dry contact) available via the telemetry link or ModBus communication network. One multi-drop data bus shall access all zone I/O control panels. Buffer relays shall be provided on each zone I/O control panel for operation of existing HVAC equipment as described in the sequence of operations, and as shown on Reference Drawings R-1 through R-9, providing DPDT, 10Amp/120Volt dry contacts for each relay logic.
- B. Dry contact relays shall be provided for low and high-alarm conditions in each building zone for transmitting alarm conditions to the fire alarm panel, as well as for signaling controls for existing makeup air units, exhaust fans, overhead rollup doors, louvers, power, gas, dialers, shunt-trip, etc.
- C. Alarms and strobes shall be provided by the GMS manufacturer as standard offered devices or shall be procured and integrated into the GMS' system with proven five (5) years experience, to provide visual and audible coverage within the work areas as shown on the Design Drawings and as required by all applicable codes and industry standards. Provide horn/strobe units complete with junction boxes and wall bracket assemblies for surface mounted audible and visible alarm notification appliances installed in NEMA 4X enclosure. The sound level of the fire alarm notification devices shall deliver a frequency response of 400 to 4000 Hz and be at least 15 dBA above the average ambient sound level or 5 dBA above the maximum sound level. Each LED strobe shall deliver minimum 2,000K peak candlepower, multi color polycarbonate lenses, suitable for installation in a NEMA 4X enclosure. Devices shall be connected to an alarm control panel with communication wiring to initiate and control each device individually, including the capability to disabled or enabled individually. The control panel shall be equipped with gel type battery backup to provide operating and supervisory current for one hour.
- D. During normal operations without alarm conditions, the horn/strobe units shall be silent and display a constant green icon. The GMS central computer display shall display green when methane concentrations are below 0.25% CH<sub>4</sub> in the space, and when nitrogen dioxide concentrations are below 1 ppm in the space, and when carbon monoxide concentrations are below 20 ppm in the space. The GMS central computer display shall display orange while operating HVAC equipment to remove methane concentrations between 0.25-1.00% CH<sub>4</sub> in the

space, or nitrogen dioxide concentrations between 1-3 ppm in the space, or carbon monoxide concentrations between 20-35 ppm in the space.

- E. The alarm thresholds shall be activated as described in the sequence of operations. The first stage alarm shall be activated when methane concentrations exceed 1.5% CH<sub>4</sub> in the space, or when nitrogen dioxide concentrations exceed 6 ppm in the space, or when carbon monoxide concentrations exceed 70 ppm in the space. The first stage alarm shall provide an audible beep at 470 Hz tone with alternating time duration consisting of 0.7 seconds on and 0.7 seconds off. The first stage alarm shall also provide a visual amber flashing strobe matching the audible beep. Additionally, the first stage alarm shall control all existing perimeter doors to open, all exhaust fans to operate, and all makeup air units to operate with gas burners disabled, similar to the existing gas monitoring sequence.
- F. The second stage alarm shall be activated when methane concentrations exceed 2.0% CH<sub>4</sub> in the space, or when nitrogen dioxide concentrations exceed 10 ppm in the space, or when carbon monoxide concentrations exceed 100 ppm in the space. The second stage alarm shall provide an audible slow whoop with a slowly ascending tone from 200 to 830 Hz in 2.5 seconds. The second stage alarm shall also provide a visual red flashing strobe matching the audible whoop. Additionally, the second stage alarm shall control all existing perimeter doors to open and de-energize all HVAC equipment, similar to the existing gas monitoring sequence.
- G. Each first stage Warning relay shall be non-latching, and shall return to the inactive state once the condition has cleared. Each second stage Alarm relay shall be selectable to act as non-latching or latching.
- H. The central control panel shall be equipped with a local Audible Alarm push-button reset switch to silence an Audible Alarm after the alarm point has been exceeded. The visual alarms shall remain on as long as any alarm level is exceeded. This push-button shall reset latched alarms if normal gas conditions exist. If the audible alarm signal has been silenced and another alarm zone trips, the audible alarm shall be re-activated.
- I. The central control panel shall be equipped to provide a Sensor Fail Relay. If a loss of communication occurs between the controller and remote sensors, the Sensor Fail Relay shall be activated, and the Sensor OK located on the controller door shall be turned off.

#### 2.04 ZONE POINT SENSORS/TRANSMITTERS

- A. The following sensor quantities shall be furnished and installed per the Design Drawings. These quantities do not include spare parts, which shall be furnished in addition to these quantities.

Gas Type	Range/ Full Scale	No. of Points	316SS Enclosure	Single Condulet	Point Sensor	LED's	Relays
Combustible Gas – IR Methane	0-100% LEL	65	X		X	X	
Carbon Monoxide	0-100 ppm	2	X	X		X	
Nitrogen Dioxide	0-10 ppm	2	X		X	X	

- B. The zone sensors/transmitters shall be infrared (IR) point type sensors capable of detecting combustible gases within 5% full scale accuracy. The sensor may be capable of calibration without gas by performing a full calibration by zero adjustment, or may be calibrated in the field using certified gas. The sensor/transmitter shall be capable of detecting an above 100% LEL condition (over-range), and indicate this condition. The sensor/transmitter shall not contain a flashback arrestor / frit. The sensor/transmitter shall allow for a gas check without alternate calibration/gas fittings or cap.
- C. The sensor/transmitter shall contain one printed circuit board (PCB) to operate between 8-30 VDC, and offer expandability to allow for optional LED's and relays. The single PCB shall not require tools for installation or removal. The single PCB must be self-aligning in the enclosure. The sensor/transmitter shall utilize 4-wire cable for sensor/transmitter to zone I/O Control panel wiring and 4-wire cable for sensors to transmitters. Sensor/transmitters shall include reset connectors for resetting latched alarms. Set-up and start-up of the sensor/transmitter shall be so that the enclosure need not be opened during this process. Sensor/transmitter shall be factory calibrated, ready for use out of the box. A field gas check is all that is required to ensure proper operation. Sensor/transmitter shall contain no pots, jumpers or switches. Sensor/transmitters shall use either RS-485 Modbus half-duplex output signal or two twisted pair digital communications cables.
- D. Each sensor/transmitter enclosure shall include a local LCD display indicating the gas type being monitored and the concentration of gas present. The display shall be illuminated at all times and shall be visible from a minimum of 5 feet. The display shall indicate all diagnostic check/fault conditions with a scrolling message detailing the condition. Error codes shall not be used. The display shall include three levels of alarm, and alarm levels shall be adjustable.
- E. Sensors shall be contained in sensor modules mounted external to the main enclosure. Sensor modules shall contain all relevant sensor information within the module including manufacture date, gas type, gas range, calibration data, and default relay parameters. Sensor module shall store all calibration data so that the module may be calibrated off site and installed in the field without the necessity of re-calibration. The sensor module shall not require a battery or power source to store this data.
- F. Sensor/transmitter shall have color coded LED's viewable from minimum 50 feet, using a solid green LED for normal operation (measure mode), solid red LED for fault condition, and blinking red LED for alarm condition.
- G. Sensor/transmitters shall be capable of storing and displaying average, minimum, and maximum gas concentrations over selected periods of time.
- H. The sensor/transmitter enclosure shall be a 316 stainless steel enclosure suitable for location in Class I, Division 1 & 2, Groups A, B, C & D classified areas or shall be UL approved intrinsically safe. The enclosure shall have a minimum of four entries, allowing for flexible mounting options for sensor, power, signal, and optional relay wiring. The enclosure shall offer a means to mount without using an entryway.

- I. Sensor/transmitter mounting shall be UL approved intrinsically safe or accomplished by explosion proof single conduit having the back portion of the enclosure separated from the electronics (allowing for mounting and wiring of the unit without the electronics present), or by remote sensor mounting with the sensor up to 100 feet away from the electronics and display using an explosion-proof sensor housing and two twisted pair cables connecting the sensor housing to the calibration electronics.
- J. All sensor/transmitters shall be capable of calibration without opening any enclosures. The sensor/transmitter shall automatically adjust its internal settings to the proper calibration values without further user intervention. Upon completion of a successful calibration, the sensor transmitter shall exit the calibration mode and retain the date stamp in the sensor/transmitter internal memory, with capability to be displayed on LCD. If calibration is unsuccessful, the display shall show an unsuccessful calibration attempt and revert to its previous settings.

#### 2.05 ADD ALTERNATE AUTO CALIBRATION

- A. The add alternate auto calibration system shall consist of the following components including but not limited to two wall mounted gas cylinder support racks; one Size A cylinder of Zero Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; one Size A cylinder of 2.5% Methane Span Gas with CVG fitting, pressure regulator assembly, isolation valves, pressure gauges, and purge to outside; a central control panel to govern the auto calibration system and record data; six zone control gas panels; and all tubing, isolation valves, solenoid valves, piping supports, conduit, control wiring, communication wiring, and relays.
- B. The auto calibration system shall be a fully automatic (hands off) system to perform monthly calibrations using NIST-certified (2% accuracy) zero and span calibration gases. Archival documentation (printable, digital format) shall include before and after, zero and span readings with date and time stamps for each gas sensor.
- C. Pressure transducers shall continuously monitor calibration gas tank pressures, and display values on the central computer's monitor screen. Calibration gas supplies at the outset shall be sufficient for at least two years of normal usage, with automatic signaling if any tank pressure falls below 250 psig. Pressure transducers shall also be installed in the distribution gas headers to the zone control gas panels with automatic signaling if any distribution header falls below 5 psig.
- D. The manufacturer shall provide Owner training to convey maintenance and operating techniques which enhance operator use, maintenance, and modifications with minimum outside support. An additional follow-up training session shall be provided at no cost after one year of service at the Owner's request.

#### 2.06 INSTALLATION

- A. The physical installation of the GMS components shall be performed by the qualified installing contractor using suitable tools and equipment, and with personnel that have been properly trained at the factory by the manufacturer. Final installation and as-built drawings shall be prepared by the Owner's Representative for Owner records using the Installing Contractor's field maintained red line markup Drawings.

1. All component hookup wiring shall be low voltage (<30VDC) except for the 115VAC power hookups at each computer and at each field installed zone I/O control panel. Control wiring entering any field I/O panel shall not exceed 110VAC, or draw more than 5 amps.
2. Factory testing shall be performed on the complete system at manufacturer's plant, with 2-week advance notice to the Owner and Owner's Representative for witnessing and accepting training. Travel and living expenses are paid by attendees. Training pricing shall be provided as part of the bids.
3. All GMS components shall be installed in areas that are readily accessible for testing and maintenance via a floor level platform lift, without exposing service personnel to unsafe conditions.
4. The manufacturer shall provide two construction site visits on a scheduled basis, initially to assist the Owner with GMS component placement for effectiveness and ease of access for maintenance. Prior to completion of the installation the manufacturer shall again visit the site for assessing the progress and acceptability of the workmanship by the Installing Contractor per the Design Drawings.
5. Upon completion of the installation, the manufacturer shall re-visit the site to test and demonstrate the system features and performance to the Owner, Owner's Representative, and local authorities having jurisdiction, constituting final commissioning of the GMS for use. Final commissioning requires witnessing by the Owner and their representatives. Scheduling of on-site visits shall be coordinated at least two weeks in advance, enabling all essential parties to participate.

## PART 3 EXECUTION

### 3.01 CONTROL SEQUENCES

- A. General: Gas monitoring systems and HVAC equipment serving their respective zones will operate with the following sequences of operation.
  1. The following will apply to all sequences.
    - a. All sequences are reversible unless otherwise noted.
    - b. Manual reset of control functions with manual reset will be at the local equipment control panel unless otherwise noted. Automatic reset of control functions will be performed at the central computer and control panel.
    - c. Where required to prevent nuisance shut downs of systems, provide time delay of sensors to allow system start up before the sensors are activated. This would include, but not be limited to low temperature freeze protection on 100 percent outdoor air units.
    - d. For existing fan systems which include motorized dampers, fans shall be stopped and started by damper end switches. When the sequence calls for the fan to run, the control system shall open the respective damper. When the damper is open as indicated by an end switch on the damper, the fan shall start.

- e. Where control sequences refer to activation of an alarm indicator, it shall be understood to mean activation of an alarm at the central computer unless specified.
- f. The Installing Contractor shall provide all power circuits, conduits, interconnecting wiring, connections, transformers, dry contact closures, relays, switches, other hardware devices, and software required to operate the gas monitoring system and subsequent HVAC equipment using existing relay logic in their respective zones to provide complete operating systems.

B. Maintenance and Storage Building

- 1. Gas monitoring systems for sensing Methane (CH<sub>4</sub>), Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>).
  - a. Each gas monitoring system shall operate continuously without interruption.
  - b. The overall building shall be monitored using six zones, with each zone containing up to sixteen sensors served by a gas control panel (GCP) and I/O Panel. Each zone shall sense CH<sub>4</sub> within the 18" zone directly below the roof construction with sensors mounted at 8" below the roof in locations shown on the Drawings. Some zones also sense CO and NO<sub>2</sub> for personnel safety. Combination CO/NO<sub>2</sub> sensors shall be mounted 30" above finished floor, and stand alone NO<sub>2</sub> sensors installed in the existing service pit shall be installed at 6" above the pit floor.
  - c. The CH<sub>4</sub> system shall operate between 0.25-1.00% concentrations, alarm above 1.5%, and sound evacuation alarms above 2.0% (all settings adjustable). When a sensor detects concentrations above 1.00% in the space, the central monitoring station shall activate the zone's corresponding existing HVAC ventilation equipment via the I/O Panel's hardwire interlocks to remove the fumes. The ventilation equipment shall continue operating until the sensor detects concentrations below 0.25% in the space. Should concentrations continue to rise above 1.5% while the ventilation equipment is operating, the central monitoring station shall activate all horn/strobe devices, open all perimeter doors, and start all HVAC equipment in the building. Should concentrations rise above 2.0%, the central monitoring station shall send an alarm to the local fire department for emergency response.
  - d. The NO<sub>2</sub> system shall operate between 1-3 ppm, alarm above 6 ppm, and sound evacuation alarms above 10 ppm (all settings adjustable). When a sensor detects concentrations above 3 ppm in the space, the central monitoring station shall activate the zone's corresponding existing HVAC ventilation equipment via the I/O Panel's hardwire interlocks to remove the fumes. The ventilation equipment shall continue operating until the sensor detects concentrations below 1 ppm in the space. Should concentrations continue to rise above 6 ppm while the ventilation equipment is operating, the central monitoring station shall activate the local horn/strobes located within the zone. Should concentrations rise above 10 ppm, the central monitoring station shall send an alarm to all horn/strobe devices, open all perimeter doors, and start all HVAC equipment in the building.

- e. The CO system shall operate between 20-35 ppm, alarm above 70 ppm, and sound evacuation alarms above 100 ppm (all settings adjustable). When a sensor detects concentrations above 35 ppm in the space, the central monitoring station shall activate the zone's corresponding existing HVAC ventilation equipment via the I/O Panel's hardwire interlocks to remove the fumes. The ventilation equipment shall continue operating until the sensor detects concentrations below 20 ppm in the space. Should concentrations continue to rise above 70 ppm while the ventilation equipment is operating, the central monitoring station shall activate the local horn/strobes located within the zone. Should concentrations rise above 100 ppm, the central monitoring station shall send an alarm to all horn/strobe devices, open all perimeter doors, and start all HVAC equipment in the building.
- f. All existing ventilation equipment shall be capable of operating via existing temperature controls and shall not be affected by the gas monitoring system installation.
- g. All existing ventilation equipment shall be capable of being shut down by the fire alarm panel and shall not be affected by the gas monitoring system installation.

END OF SECTION 15950

