

**REQUEST FOR PROPOSALS FOR**

**INSTALLATION OF INTELLIGENT TRANSPORTATION SYSTEMS**  
**BETWEEN**  
**MILEPOST 10.2 AND MILEPOST 317.5**  
**MILEPOST A57.4 AND MILEPOST A129.5**  
**IN**  
**BEAVER, ALLEGHENY, CUMBERLAND, DAUPHIN, CHESTER, LEHIGH, LUZERNE,**  
**WYOMING COUNTIES, PENNSYLVANIA**

**ISSUING OFFICE**

**Pennsylvania Turnpike Commission**  
**Intelligent Transportation System/Traffic Department**

**RFP NUMBER 10-40110-2744**

**DATE OF ISSUANCE**

**September 22, 2010**

# **REQUEST FOR PROPOSALS FOR**

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## **TABLE OF CONTENTS**

<b>Part I</b>	<b>- GENERAL INFORMATION FOR PROPOSERS</b>	<b>1</b>
<b>Part II</b>	<b>- INFORMATION REQUIRED FROM PROPOSERS</b>	<b>9</b>
<b>Part III</b>	<b>- CRITERIA FOR SELECTION</b>	<b>13</b>
<b>Part IV</b>	<b>- WORK STATEMENT</b>	<b>14</b>

**APPENDIX A – SPECIAL PROVISIONS**

**APPENDIX B – RWIS FUNCTIONAL REQUIREMENTS**

**APPENDIX C – PENNDOT 408 SPECIFICATIONS**

**APPENDIX D – TESTING AND TRAINING REQUIREMENTS**

**APPENDIX E – LOBBYING CERTIFICATION FORM**

**APPENDIX F – SECTION 1 (DSP8)**

**APPENDIX G – SECTION 2 (BUY AMERICA)**

**APPENDIX H – DAVIS-BACON WAGE ACT REQUIREMENTS**

**APPENDIX I – WIRELESS COMMUNICATIONS INFRASTRUCTURE INFORMATION**

**APPENDIX J – SECTION 901 – MAINTENANCE AND PROTECTION OF TURNPIKE  
TRAFFIC DURING CONSTRUCTION**

## **PART I**

### **GENERAL INFORMATION FOR PROPOSERS**

**I-1. Purpose.** This request for proposals (RFP) provides interested PROPOSERS with sufficient information to enable them to prepare and submit proposals for consideration by the Pennsylvania Turnpike Commission (Commission) to satisfy a need for the furnishing and installation of a completely functional Roadway Weather Information System (RWIS) along Mainline and Northeast Extension locations.

Work items include, but are not limited to:

- Design, procure, install, integrate, and test eight (8) RWIS, associated structures, and equipment along the Turnpike. The term “integrate” refers to the physical integration at the site and integration with the RWIS server at the Highspire facility.
- Provide training for Commission users and those maintaining devices.
- Design, procure, and install, a complete end-to-end communication system (fiber optic, wireless or a hybrid of both) to the aforementioned equipment.

This contract is located between milepost 10.2 and milepost 317.5 along the mainline and milepost A57.4 and milepost A129.55 along the Northeast Extension in Beaver, Allegheny, Cumberland, Dauphin, Chester, Lehigh, Luzerne, and Wyoming Counties, Pennsylvania.

**I-2. Issuing Office.** This RFP is issued for the Commission by the Intelligent Transportation System/Traffic Department.

**I-3. Scope.** This RFP contains instructions governing the proposals to be submitted and the material to be included therein; a description of the service to be provided; requirements which must be met to be eligible for consideration; general evaluation criteria; and other requirements to be met by each proposal.

**I-4. Problem Statement.** The Turnpike Commission is expanding their Roadway Weather Information System coverage along the Mainline and Northeast Extension roadways. The intent of this contract is to acquire the services of a PROPOSER to provide the Turnpike Commission with this expanded ITS system to manage traffic, increase mobility, and improve safety. Additional detail is provided in Part IV of this RFP.

**I-5. Type of Contract.** It is proposed that if a contract is entered into as a result of this RFP, it will be a deliverables-based lump sum contract and will contain the provisions shown in the attached standard contract. The Commission may in its sole discretion undertake negotiations with PROPOSERS whose proposals as to price and other factors show them to be qualified, responsible, and capable of performing the work.

**I-6. Rejection of Proposals.** The Commission reserves the right to reject any and all proposals received as a result of this request, or to negotiate separately with competing PROPOSERS.

**I-7. Subcontracting.** Any use of subcontractors by a PROPOSER must be identified in the proposal. During the contract period, use of any subcontractors by the selected PROPOSER that were not previously identified in the proposal must be approved in advance in writing by the Commission.

A firm that responds to this solicitation as a PROPOSER may not be included as a designated subcontractor to another firm that responds to the same solicitation. **Multiple responses under any of the foregoing situations may cause the rejection of all responses of the firm or firms involved.** This does not preclude a firm from being set forth as a designated subcontractor to more than one prime PROPOSER responding to the project advertisement.

**I-8. Incurring Costs.** The Commission is not liable for any costs the PROPOSER incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of contract.

**I.9. Questions and Answers.** Written questions may be submitted to clarify any points in the RFP which may not have been clearly understood. Written questions should be submitted by email to [RFP-Q@paturndpike.com](mailto:RFP-Q@paturndpike.com) with **RFP 10-40110-2744** in the Subject Line to be received no later than **12:00 Noon, local time, October 7, 2010.** All questions and written answers will be posted to the website as an addendum to and become part of this RFP.

**I-10. Addenda to the RFP.** If it becomes necessary to revise any part of this RFP before the proposal response date, addenda will be posted to the Commission's website under the original RFP document. It is the responsibility of the PROPOSER to periodically check the website for any new information or addenda to the RFP.

The Commission may revise a published advertisement. If the Commission revises a published advertisement less than ten days before the RFP due date, the due date will be extended to maintain the minimum ten-day advertisement duration if the revision alters the project scope or selection criteria. Firms are responsible to monitor advertisements/addenda to ensure the submitted proposal complies with any changes in the published advertisement.

**I-11. Response.** To be considered, proposals must be delivered to the Pennsylvania Turnpike Commission's Contracts Administration Department, Attention: Wanda Metzger, on or before **12:00 Noon, local time, November 4, 2010.** The Pennsylvania Turnpike Commission is located at 700 South Eisenhower Boulevard, Middletown, PA 17057 (Street address). Our mailing Address is P. O. Box 67676, Harrisburg, PA 17106.

**Please note that use of U.S. Mail delivery does not guarantee delivery to this address by the above-listed time for submission.** PROPOSERS mailing proposals should allow sufficient delivery time to ensure timely receipt of their proposals. If the Commission office location to which proposals are to be delivered is closed on the proposal response date, due to inclement weather, natural disaster, or any other cause, the deadline for submission shall be automatically extended until the next Commission business day on which the office is open. Unless the PROPOSERS are otherwise notified by the Commission, the time for submission of proposals shall remain the same.

**I-12. Proposals.** To be considered, PROPOSERS should submit a complete response to this RFP, using the format provided in PART II. Each proposal should be submitted **seven (7) color copies** and **one complete and exact copy** of the technical proposal on CD-ROM in Microsoft Office or Microsoft Office-compatible format to the Contract Administration Department. No other distribution of proposals will be made by the PROPOSER. Each proposal page should be numbered for ease of reference. Proposals must be signed by an official authorized to bind the PROPOSER to its provisions and include the PROPOSER'S Federal Identification Number. For this RFP, the proposal must remain

valid for at least, **120** days. Moreover, the contents of the proposal of the selected PROPOSER will become contractual obligations if a contract is entered into.

Each and every PROPOSER submitting a proposal specifically waives any right to withdraw or modify it, except as hereinafter provided. Proposals may be withdrawn by written, telefax or email notice received at the Commission's address for proposal delivery prior to the exact hour and date specified for proposal receipt. However, if the PROPOSER chooses to attempt to provide such written notice by telefax transmission, the Commission shall not be responsible or liable for errors in telefax transmission. A proposal may also be withdrawn in person by a PROPOSER or its authorized representative, provided its identity is made known and it signs a receipt for the proposal, but only if the withdrawal is made prior to the exact hour and date set for proposal receipt. A proposal may only be modified by the submission of a new sealed proposal or submission of a sealed modification which complies with the requirements of this RFP.

**I-13. Economy of Preparation.** Proposals should be prepared simply and economically, providing a straightforward, concise description of the PROPOSER'S ability to meet the requirements of the RFP. Proposals will be limited to 30 pages (not including appendices) no smaller than 12pt. Times New Roman font, 8½ x 11 inch page size (larger pages are allowed for figures, cut sheets or tables, but they must be folded into the overall proposal and used sparingly).

**I-14. Discussions for Clarification.** PROPOSERS who submit proposals may be required to make an oral or written clarification of their proposals to the Issuing Office to ensure thorough mutual understanding and PROPOSER responsiveness to the solicitation requirements. The Issuing Office will initiate requests for clarification.

**I-15. Best and Final Offers.** The Issuing Office reserves the right to conduct discussions with PROPOSERS for the purpose of obtaining "best and final offers" from ALL qualified proposers through a one-step selection process. To obtain best and final offers from ALL qualified PROPOSERS, the Issuing Office may do one or more of the following: a) enter into pre-selection negotiations; b) schedule oral presentations; c) request a Schedule of Values; and d) request revised proposals. The Issuing Office will limit any discussions to responsible PROPOSERS whose proposals the Issuing Office has determined to be reasonably susceptible of being selected for award. When the PROPOSER is required to provide a Schedule of Values for their bid, they will follow the format shown in Figure 1. An electronic version of this sample will be made to the PROPOSER upon request.

**I-16. Prime PROPOSER Responsibilities.** The selected PROPOSER will be required to assume responsibility for all services offered in its proposal whether or not it produces them. Further, the Commission will consider the selected PROPOSER to be the sole point of contact with regard to contractual matters.

**I-17. Proposal Contents.** Proposals will be held in confidence and will not be revealed or discussed with competitors, unless disclosure is required to be made (i) under the provisions of any Commonwealth or United States statute or regulation; or (ii) by rule or order of any court of competent jurisdiction. All material submitted with the proposal becomes the property of the Pennsylvania Turnpike Commission and may be returned only at the Commission's option. Proposals submitted to the Commission may be reviewed and evaluated by any person other than competing Proposers at the discretion of the Commission. The Commission has the right to use any or all ideas presented in any proposal. Selection or rejection of the proposal does not affect this right.

In accordance with the Pennsylvania Right-to-Know Law (RTKL), 65 P.S. § 67.707 (Production of Certain Records), Proposers shall identify any and all portions of their Proposal that contains confidential proprietary information or is protected by a trade secret. Proposals shall include a written statement signed by a representative of the company/firm identifying the specific portion(s) of the Proposal that contains the trade secret or confidential proprietary information.

Proposers should note that “trade secrets” and “confidential proprietary information” are exempt from access under Section 708(b)(11) of the RTKL. Section 102 defines both “trade secrets” and “confidential proprietary information” as follows:

Confidential proprietary information: Commercial or financial information received by an agency: (1) which is privileged or confidential; **and** (2) the disclosure of which would cause substantial harm to the competitive position of the person that submitted the information.

Trade secret: Information, including a formula, drawing, pattern, compilation, including a customer list, program, device, method, technique or process that: (1) derives independent economic value, actual or potential, from not being generally known to and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use; **and** (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy. The term includes data processing software by an agency under a licensing agreement prohibiting disclosure.

65 P.S. §67.102 (emphasis added).

The Office of Open Records has determined that a third party must establish a trade secret based upon factors established by the appellate courts, which include the following:

- the extent to which the information is known outside of his business;
- the extent to which the information is known by employees and others in the business;
- the extent of measures taken to guard the secrecy of the information;
- the value of the information to his business and to competitors;
- the amount of effort or money expended in developing the information; and
- the ease of difficulty with which the information could be properly acquired or duplicated by others.

*See Crum v. Bridgestone/Firestone North Amer. Tire.*, 907 A.2d 578, 585 (Pa. Super. 2006).

The Office of Open Records also notes that with regard to “confidential proprietary information the standard is equally high and may only be established when the party asserting protection shows that the information at issue is either ‘commercial’ or ‘financial’ and is privileged or confidential, and the disclosure **would** cause substantial competitive harm.” (emphasis in original).

For more information regarding the RTKL, visit the Office of Open Records’ website at [www.openrecords.state.pa.us](http://www.openrecords.state.pa.us).

**I-18 Debriefing Conferences.** PROPOSERS whose proposals are not selected will be notified of the name of the selected PROPOSER and given the opportunity to be debriefed, at the PROPOSER’S request. The Issuing Office will schedule the time and location of the debriefing. The PROPOSER will not be compared with other PROPOSERS, other than the position of its proposal in relation to all other proposals.

**I-19. News Releases.** News releases pertaining to this project will not be made without prior Commission approval, and then only in coordination with the Issuing Office.

**I-20. Commission Participation.** Unless specifically noted in this section, PROPOSERS must provide all services to complete the identified work. The Issuing Office will provide the necessary workspace to accommodate up to two individuals for the duration of the initial deployment (for database entry, training, report generation, etc.) and for a period of two months after cutover to the new system.

**I-21. Cost Submittal.** The cost submittal shall be placed in a separately sealed envelope within the sealed proposal and kept separate from the technical submittal. **Failure to meet this requirement may result in disqualification of the proposal.**

**I-22. Term of Contract.** The term of the contract will commence on the Effective Date (as defined below) and will end within 12-months from the Notice to Proceed (NTP) date. All the construction for the project will end within 12-months from the NTP date. The Commission shall fix the Effective Date after the contract has been fully executed by the PROPOSER and by the Commission and all approvals required by Commission contracting procedures have been obtained.

**I-23. PROPOSER'S Representations and Authorizations.** Each PROPOSER by submitting its proposal understands, represents, and acknowledges that:

- a. All information provided by, and representations made by, the PROPOSER in the proposal are material and important and will be relied upon by the Issuing Office in awarding the contract(s). Any misstatement, omission, or misrepresentation shall be treated as fraudulent concealment from the Issuing Office of the true facts relating to the submission of this proposal. A misrepresentation shall be punishable under 18 Pa. C.S. 4904.
- b. The price(s) and amount of this proposal have been arrived at independently and without consultation, communication or agreement with any other PROPOSER or potential PROPOSER.
- c. Neither the price(s) nor the amount of the proposal, and neither the approximate price(s) nor the approximate amount of this proposal, have been disclosed to any other firm or person who is a PROPOSER or potential PROPOSER, and they will not be disclosed on or before the proposal submission deadline specified in the cover letter to this RFP.
- d. No attempt has been made or will be made to induce any firm or person to refrain from submitting a proposal on this contract, or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal or other form of complementary proposal.
- e. The proposal is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive proposal.
- f. To the best knowledge of the person signing the proposal for the PROPOSER, the PROPOSER, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last

- four (4) years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding or proposing on any public contract, except as disclosed by the PROPOSER in its proposal.
- g. To the best of the knowledge of the person signing the proposal for the PROPOSER and except as otherwise disclosed by the PROPOSER in its proposal, the PROPOSER has no outstanding, delinquent obligations to the Commonwealth including, but not limited to, any state tax liability not being contested on appeal or other obligation of the PROPOSER that is owed to the Commonwealth.
  - h. The PROPOSER is not currently under suspension or debarment by the Commonwealth, or any other state, or the federal government, and if the PROPOSER cannot certify, then it shall submit along with the proposal a written explanation of why such certification cannot be made.
  - i. The PROPOSER has not, under separate contract with the Issuing Office, made any recommendations to the Issuing Office concerning the need for the services described in the proposal or the specifications for the services described in the proposal.
  - j. Each PROPOSER, by submitting its proposal, authorizes all Commonwealth agencies to release to the Commission information related to liabilities to the Commonwealth including, but not limited to, taxes, unemployment compensation, and workers' compensation liabilities.

**I-24. Lobbying Certification and Disclosure of Lobbying Activities.** This project will be funded, in part, with federal monies. Public Law 101-121, Section 319, prohibits federal funds from being expended by the recipient or by any lower tier sub-recipients of a federal contract, grant, loan, or a cooperative agreement to pay any person for influencing, or attempting to influence a federal agency or Congress in connection with the awarding of any federal contract, the making of any federal grant or loan, or entering into any cooperative agreement. All parties who submit proposals in response to this RFP must sign the "Lobbying Certification Form" and, if applicable, complete the "Disclosure of Lobbying Activities" form attached in Appendix E.

**I-25. Governing Specifications.** In addition to the terms and conditions contained in this RFP and the attached contract, this RFP is made under, subject to and governed by the specifications contained within Commission Specifications, Commission Standard Special Provisions, and PennDOT Publication 408/2007, including all changes and latest updates. Within these specifications where dual measurement and tabular options are presented, English standards apply. The following Designated Special Provisions (DSP) is found in Appendix C of PennDOT Publication 408:

- DSP8. F.A.R. – Required Contract Provisions Federal-Aid Construction Projects – March 10, 1994. The content of DSP8 is as contained in Federal Highway Administration (FHWA) Document FHWA-1273, Required Contract Provisions Federal-Aid Construction Contracts. DSP8 is included in Appendix F of the RFP.
- DSP9. Special Supplement – Anti-Pollution Measures – August 26, 1999.
- DSP10. Nondiscrimination/Sexual Harassment Clause – June 30, 1999.
- DSP11. Contractor Integrity Provisions – June 30, 1999.
- DSP12. Executive Order 11246, with Appendices A and B.



The project also is subject to the following PennDOT Special Provisions contained in Appendix C of the RFP:

- G5A. Revisions to Specifications.
- G6A. Purchasable Items.
- G401A. Advance Notice of Traffic Restrictions.
- P9011B. Flagging Training.

**I-26 Notification of Federal-Aid Requirements.** This project includes fieldwork that is considered construction. As a federally-funded project, the Contractor must ensure that all activities that are considered construction comply with the federal-aid requirements outlined in Federal Highway Administration (FHWA) Document FHWA-1273. The requirements of FHWA-1273 are outlined in DSP8 of PennDOT Publication 408, Appendix C, which is included in Appendix F of the RFP. The Contractor must also ensure that all activities that are considered construction comply with the domestic material requirements (“Buy America”), which are outlined in the Code of Federal Regulations, Title 23, and Section 635.410, included in Appendix G. The Contractor must also ensure that all activities that are considered construction comply with the Davis-Bacon Wage Act requirements, which are included in Appendix H. The Provisions of Pennsylvania Wage Act of August 15, 1961, P.L. 987 as amended, together with the rates and regulations promulgated by secretary of Labor and Industry, will apply to this project. Wage rates for Beaver, Allegheny, Cumberland, Dauphin, Chester, Lehigh, Luzerne, and Wyoming Counties are included in Appendix H.

**I-27. Protests.** Protests shall be handled in accordance with Section 1711.1 of the Commonwealth Procurement Code, 62 Pa. C.S. § 1711.1, which generally provide as follows:

- a. A bidder or offeror, a prospective bidder or offeror or a prospective contractor who is aggrieved in connection with the solicitation or award of a contract may protest to the Issuing Office in writing.
- b. All protests must be made within seven (7) days after the protestant knows or should have known of the facts giving rise to the protest.
- c. If a protest is submitted by a protestant who is a prospective bidder or offeror, the protest must be received by the Issuing Office prior to the bid opening time or the proposal receipt date.
- d. If a protestant fails to comply with the period for filing a protest, a protest shall be considered untimely and shall be disregarded by the Pennsylvania Turnpike Commission.
- e. A protest shall state all grounds upon which the protestant asserts the solicitation or award of the contract was improper, and may include all documents and information deemed relevant to the protest.
- f. The RFP Administrator, within 15 days of receipt of the protest, may submit a response to the protest to the head of the purchasing agency and the protestant. The protestant may file a reply to the response within 10 days of the date of the response.
- g. The Commission’s Project Manager or his designee shall review the protest and any response or reply and review additional documentation or information deemed necessary

to render a decision, and, at his sole discretion, may conduct a hearing. The protestant and the RFP Administrator will be given a reasonable opportunity to review and address any such additional documentation or information.

- h. Within 60 days of the receipt of the protest, unless an extension is otherwise agreed to by the Commission and the protestant, the Commission's project engineer or his designee shall issue a written determination which is a final order stating the reasons for the decision.
- i. Within 15 days of the mailing date, a protestant may file an appeal of the final determination denying a protest to the Commonwealth Court. The appeal may not raise issues not raised by the protestant before the Commission.
- j. The Pennsylvania Turnpike Commission shall have the authority to settle and resolve a protest of an aggrieved bidder, offeror, or contractor, actual or prospective, concerning the solicitation or award of a contract.
- k. In the event of a timely protest and until the time has elapsed for the protestant to file an appeal with the Commonwealth Court, the Pennsylvania Turnpike Commission shall not proceed further with the solicitation or with the award of the contract unless and until it makes a written determination that the protest is clearly without merit or that award of the contract without delay is necessary to protect substantial interests of the Commonwealth.

The foregoing is intended as a summary of Section 1711.1 for informational purposes only. In the event of a conflict with Section 1711.1, the statutory language shall prevail. Nothing herein shall be construed in any way that affords a protestant any rights in addition to those specifically set forth in Section 1711.1 of the Commonwealth Procurement Code.

**I-28. Performance / Payment Bond.** When awarded the contract, furnish a Performance Bond, with sufficient surety or sureties, in an amount equal to 100% of the contract price. Have the bond specify that the contracted work will be completed in a manner satisfactory to the Commission. Have the bond state that the Commission is not liable for any expenses incurred through the failure to complete the work as specified, nor liable for any damages growing out of the carelessness of the Contractor, the Contractor's employees, or subcontractors. Also furnish a Payment Bond in the amount of 100% of the contract price. Have a corporate surety, legally authorized to transact business in the State and satisfactory to the Commission, execute both bonds. If the Commission decides the bond surety is unsatisfactory, promptly furnish any additional required security to protect the Commission's interests and the interests of all persons, firms, or corporations who/which have furnished material, provided equipment on rental, or supplied/performed labor or services on, or in connection with, the performance of the work for this contract.

Have participants in a joint venture submit a single Performance Bond and a single Payment bond, each signed by both the joint participants and by their surety. These bonds are to cover their joint and individual liability.

The Proposer is required to include with the submittal statement on Bonding Agent's letterhead stating intent to provide the bonds required for this contract. The Proposer must be capable of and submit proof of ability to provide a 100% Performance Bond and 100% Payment Bond. Bonds must be underwritten by a bonding company with an "A" rating from Best of U.S. Treasury.

## PART II

### INFORMATION REQUIRED FROM PROPOSERS

Proposals must be submitted in the format, including heading descriptions, outlined below. To be considered, the proposal must respond to all requirements in this part of the RFP. Any other information thought to be relevant, but not applicable to the enumerated categories, should be provided as an appendix to the proposal. Each proposal shall consist of two (2) separately sealed submittals. The submittals are as follows: (i) Technical Submittal, in response to **Sections II-1 through II-7** hereof; (ii) Cost Submittal, in response to Section **II-8** hereof.

The Commission reserves the right to request additional information, which, in the Commission's opinion, is necessary to assure that the PROPOSER'S competence, number of qualified employees, business organization, and financial resources are adequate to perform according to the RFP.

The Commission may make such investigations as deemed necessary to determine the ability of the PROPOSER to perform the work, and the PROPOSER shall furnish to the Issuing Office all such information and data for this purpose as requested by the Commission. The Commission reserves the right to reject any proposal if the evidence submitted by, or investigation of, such PROPOSER fails to satisfy the Commission that such PROPOSER is properly qualified to carry out the obligations of the agreement and to complete the work specified.

Note that the prospective proposers may visit the sites, as they feel necessary. Contact Louis L. Cortelazzi at (717)-939-9551 X 3450, email: [lcortela@paturnpike.com](mailto:lcortela@paturnpike.com) at least 24 hours before all site visits. All vehicles must operate a vehicle warning light and all personnel must wear a hard hat and reflective vest within Turnpike's Right-Of-Way.

**II-1. Statement of the Problem.** The PROPOSER shall provide text to verify complete understanding of the services required by this RFP.

**II-2. Management Summary.** Include a narrative description of the team's technical approach and a list of the items to be delivered or services to be provided.

**II-3. Work Plan.** Describe in narrative form your technical plan for accomplishing the work. Use the task descriptions in Part IV of this RFP as your reference point. Include in the text what type of communication system (fiber optic, wireless, or hybrid of the two) the PROPOSER intends to use at each location. Modifications of the task descriptions are permitted; however, reasons for changes should be fully explained. Include a detailed project schedule or similar type display, time related, showing each event anticipated by the PROPOSER. If more than one approach is apparent, comment on the reason(s) for choosing a particular approach.

**II-4. Past Performance -** The PROPOSER must be PennDOT Prequalified (P1, P2 and P3) for ITS construction and integration to demonstrate their (personnel and previous work experience) ability to complete this project. The PROPOSER, design consultant and all subconsultants must have a current Annual Qualification Package on file in ECMS, as well as being a PennDOT registered business partner. The PROPOSER must also submit information on contracts/subcontracts performed over the past five (5) years for organizations (commercial, state, local, Federal, etc.) involving similar or related services. The PROPOSER shall submit no more than 10 contract/subcontract descriptions for the entire proposed team (PROPOSER plus major subcontractors/engineers). The PROPOSER must submit this

information on the most recently completed contracts/subcontracts or on-going contract/subcontracts that are at least three months into the period of performance. The following information must be provided.

- Customer name, address, and telephone number.
- Technical office point(s) of contact (name, telephone number, and email address).
- Contracting/Business office point(s) of contact (name and telephone number).
- Contract name and number, if applicable.
- Date of contract award and period of performance.
- Type of contract.
- Total contract dollar value at time of award.
- Start/End dates of Contract. Identify if the contract was completed early, late, or on-time.
- Brief description of product or services.
- Brief description of the contract's relevance to the Task Areas of this project.
- Matrix of Past Performance and Experience. PROPOSER shall create a matrix relating past work performed by the proposed team (prime PROPOSER plus major subcontractors) to the Task Areas of this project.

**II-5. Personnel.** Include the number, and names where practical, of executive and professional personnel, analysts, auditors, researchers, programmers, consultants, etc., who will be engaged in the work. The proposal shall demonstrate the PROPOSERS ability to perform Task 2, described in Part IV. For this project, the PROPOSER must include the following individuals:

- Project Manager – This person will serve as the PROPOSERS overall Point of Contact for the project. Document the experience of this individual to demonstrate a minimum of three (3) projects and five (5) years successfully managing ITS projects of similar size and content.
- Construction Project Manager - This person will serve as the PROPOSERS overall construction Project Manager for the project. Document the experience of this individual to demonstrate a minimum of three (3) ITS projects successfully constructing ITS projects of similar size.
- Lead Construction Foreman - This person will serve as the PROPOSERS overall construction foreman for the project. Document the experience of this individual to demonstrate a minimum of three (3) ITS projects successfully constructing ITS projects of similar size.
- ITS Project Manager - This person will serve as the PROPOSERS overall ITS Project Manager for the project. This person must be a licensed Professional Engineer, in good standing, in the Commonwealth of Pennsylvania. Document the experience of this individual to demonstrate a minimum of three (3) projects and five (5) years successfully designing ITS projects of similar size and content.
- Lead ITS Engineer - This person will serve as the PROPOSERS overall ITS Designer for the project. This person must be a licensed Professional Engineer, in good standing, in the Commonwealth of Pennsylvania. Document the experience of this individual to demonstrate a minimum of three (3) projects and five (5) years successfully designing ITS projects of similar size and content.

Show where these personnel will be physically located during the time they are engaged in the work. Include through a resume or similar document, educational background and experience in which each team member will be providing their expertise i.e. project management, database engineering, software engineering, etc. Indicate the responsibilities each will have in this project and how long each has been with your company.

Identify the major subcontractors you intend to use and the services they will perform. Where subcontractors are named, include information regarding their role, personnel to be provided, and through resumes or similar documents, their educational background and experience. Indicate the responsibilities each will have in this project and how long each has been with the named subcontractor.

**II-6. Training.** The PROPOSER will provide a total of two (2) training sessions on all ITS subsystems during the contract period. The training will consist of separate training for operators, supervisor/management/system administrators, and maintenance supervisors and will occur before System Acceptance Testing (SAT). This training will be digitally recorded and provided to the Commission within 2 weeks of this training. Refer to Appendix D for more detailed training requirements.

**II-7. DBE/MBE/WBE Participation.** The Pennsylvania Turnpike Commission is committed to providing opportunities for Disadvantaged Business Enterprises to compete for work. To support this commitment, there is a goal of ten percent (10%) of the total contract dollar amount set for this RFP. As part of their proposal, the Prime PROPOSER must identify how this goal will be accomplished. Responding firms shall clearly identify DBE/MBE/WBE firms, expected to participate in this contract, in their Proposal. The Commission recognizes the following small, disadvantaged, woman and minority-owned business certifications for this RFP:

*PA Unified Certification Program [www.paucp.com](http://www.paucp.com)*

*PA Department of General Services [www.dgs.state.pa.us](http://www.dgs.state.pa.us)*

*National Minority Supplier Development Council [www.nmsdcus.org](http://www.nmsdcus.org)*

*Women Business Enterprise National Council [www.wbenc.org](http://www.wbenc.org)*

*U.S. Small Business Administration [www.sba.gov](http://www.sba.gov) small disadvantaged businesses or 8(a) small disadvantaged business concerns*

**II-8. Cost Submittal.** The information requested in this section shall constitute your cost submittal. **The Cost Submittal shall be placed in a separate sealed envelope within the sealed proposal, separate from the technical submittal.**

PROPOSERS should **not** include any assumptions in their cost submittals. If the PROPOSER includes assumptions in its cost submittal, the Issuing Office may reject the proposal. PROPOSERS should direct in writing to the Issuing Office pursuant to Part I-9 of this RFP any questions about whether a cost or other component is included or applies. All PROPOSERS will then have the benefit of the Issuing Office's written answer so that all proposals are submitted on the same basis.

The following materials **must** be provided in the sealed Cost Submittal. Failure to provide any of these completed items will constitute an incomplete Cost Submittal and an automatic rejection of the PROPOSER'S proposal.

1. Completed PROPOSER'S Bid Sheet. (The Bid Sheet is located on page 19 of 20.)
2. Completed Schedule of Values form **for each bid item**, except items 0608-0001, and 9900-0410. A sample Schedule of Values form is provided in Figure 1 of this RFP.

**Any costs not provided in the cost proposal will be assumed as no charge to the Commission.**

**The selected PROPOSER shall only perform work on this contract after the Effective Date is affixed and the fully-executed contract sent to the selected PROPOSER. The Commission shall issue a written Notice to Proceed to the selected PROPOSER authorizing the work to begin on a date which is on or after the Effective Date. The selected PROPOSER shall not start the performance of any work prior to the date set forth in the Notice of Proceed and the Commission shall not be liable to pay the selected PROPOSER for any service or work performed or expenses incurred before the date set forth in the Notice to Proceed. No Commission employee has the authority to verbally direct the commencement of any work under this Contract.**

## PART III

### CRITERIA FOR SELECTION

**III-1. Mandatory Responsiveness Requirements.** To be eligible for selection, a proposal should be (a) timely received from a PROPOSER; (b) properly signed by the PROPOSER; and (c) formatted such that all cost data is kept separate from and not included in the Technical Submittal.

**III-2.** Proposals will be reviewed and evaluated by a committee of qualified personnel selected by the Commission. This committee will recommend for selection the proposal that most closely meets the requirements of the RFP and satisfies Commission needs. Award will only be made to a PROPOSER determined to be responsive and responsible in accordance with Commonwealth Procurement Code.

**III-3.** The following criteria will be used, in order of relative importance from the highest to the lowest, in evaluating each proposal:

- a. **Understanding the Problem.** This refers to the PROPOSER'S understanding of the Commission needs that generated the RFP, of the Commission's objectives in asking for the services or undertaking the study, and of the nature and scope of the work involved.
- b. **PROPOSER Qualifications.** This refers to the ability of the PROPOSER to meet the terms of the RFP, especially the time constraint and the quality, relevancy, and recency of studies and projects completed by the PROPOSER. This also includes the PROPOSER'S financial ability to undertake a project of this size.
- c. **Soundness of Approach.** Emphasis here is on the techniques for collecting and analyzing data, sequence, and relationships of major steps, and methods for managing the service/project. Of equal importance is whether the technical approach is completely responsive to all written specifications and requirements contained in the RFP and if it appears to meet Commission objectives.
- d. **Cost.** Emphasis here is on the PROPOSER to demonstrate to the Commission that the above criteria and the functional requirements of the RFP can be completed within a cost efficient manner. This area will be weighted, but will not be the deciding factor in the selection process. The Commission reserves the right to select a proposal based upon all the factors listed above, and will not necessarily choose the firm offering the best price. The Commission will select the firm with the proposal that best meets its needs, at the sole discretion of the Commission.
- e. **Personnel Qualifications.** This refers to the competence of professional personnel who would be assigned to the job by the PROPOSER. Qualifications of professional personnel will be measured by experience and education, with particular reference to experience on studies/services similar to that described in the RFP. Particular emphasis is placed on the qualifications of the project manager.
- f. **DBE/MBE/WBE Participation.** This refers to the inclusion of D/M/WBE firms, as described in Part II-7, and the extent to which they are expected to participate in this contract. Participation will be measured in terms of total dollars committed to certified D/M/WBE firms.

## **PART IV**

### **WORK STATEMENT**

#### **IV-1. Objectives.**

The objective of this contract is to acquire the services of the PROPOSER to complete the Pennsylvania Turnpike's ITS expansion to better effectively and efficiently manage congestion, improve safety and disseminate information to the motoring public. The Proposer will be required to design, supply, install, integrate, and test all equipment for full functionality and contract intention. In addition, the Proposer will train Commission personnel on field devices and TOC hardware/software to allow the Commission to better monitor and disseminate traffic information from their TOC facility. This work will include all required maintenance and protection of traffic in accordance with both Commission ITS Standards and PennDOT Publications 203 and supplements therein. If there are any conflicts between the Commission and PennDOT standards, the PROPOSER shall follow the Commission standards. For short-term closures to install roadway sensors, the Commission's maintenance personnel will provide the lane closures. The PROPOSER is responsible for any shoulder closure.

**IV-2. Nature and Scope of the Project.** The Pennsylvania Turnpike is a key transportation route within the Commonwealth of Pennsylvania and a vital link in the roadway network of the eastern United States. The Turnpike is 512 miles in length with 55 fare collection facilities, twenty-two (22) service plazas and two (2) traveler information centers, twenty (20) maintenance facilities, eight (8) State Police Barracks, and five (5) tunnels. The proposed ITS subsystem expansion will enable the Commission to better collect and disseminate roadway conditions and potential alternative routes to motorists to aide in the reduction of congestion. The system should have the capacity to include future expansion.

#### **IV-3. Tasks.**

##### **Task A - Project Management**

1. Provide a project schedule to Commission for review and approval of the tasks associated with all Phases of this project. The schedule, created in the latest version of Primavera, shall detail, at a minimum the tasks provided below, as well as all tasks/subtasks the contractor required to complete each phase of the RFP in a clear and efficient manner. In addition, the schedule should identify the milestones listed in Section IV-4.
2. Attend and conduct biweekly (once every 2 weeks) project status meetings. The PROPOSER is responsible to create and submit minutes to attendees, for all project meetings, within three (3) business days. Meeting minutes shall be consecutively numbered throughout the entire project and submitted in PDF format.
3. Project management is incidental to the project and will not be paid separately.
4. Coordinate with the Commissions (or their representative) Quality Assurance / Quality Control (QA/QC) services.



**Task B - Design, construct, integrate, test and train Commission personnel on the ITS subsystems being installed under this expansion project.**

1. Design, procure, furnish, install, and test a completely functional Roadway Weather Information System (RWIS) at locations as identified in **Table 1 – Equipment List**. Each location will include the PROPOSER to install one (1) RWIS tower structure, appropriate foundation, RWIS component as described in Appendix B, control cabinet, power, and communications (fiber optic or wireless) to each location, as specified within these contract documents. The RWIS equipment provided must be compatible and integrated into the Commissions existing WAN communications system and RWIS server, located at the Highspire, PA facility. The RWIS firmware must also be compatible to the firmware of all the existing RWIS sites on the Mainline, specifically to those recently updated with MP 162 – MP 172. The PROPOSER is required to provide all required hardware and software improvements at the Commissions facility to allow operational staffs complete control of this subsystem. The PROPOSER shall coordinate with the Commission on the final location of each RWIS prior to the design submission. The PROPOSER shall have the option to install one of the communications methods shown in **Table 1**. It is the responsibility of the PROPOSER to clearly identify the communication method being utilized at every RWIS site within their proposal. Failure to be clear on the communications method may result in a lower score.

**Construction of the above must begin within 90 days from Notice-to-Proceed. The actual required completion dates for project milestones will be finalized during the kick-off meeting for this work.**

**IV-4. Anticipated Project Milestones / Project Schedule**

Key project milestones are indicated below.

- Notice-to-Proceed
- System Block Diagrams
- List of Equipment
- Begin Procurement
- Engineering Design Review and Field Walk
- Engineering Design Complete
- Engineering Design Approval
- End Procurement
- Field Construction
- Training
- System Acceptance Testing (SAT)
- Operational Period / Operation Acceptance Testing (OAT)
- Submission of Final As-Built Drawings
- Final System Acceptance By Commission

**IV-5. Report and Project Controls**

- a. Upon being given a Notice-to-Proceed, the successful PROPOSER shall meet biweekly (every two weeks) with the Commissions Project Manager and their representatives to assess the status of the tasks included in IV-3 above, as directed by the Commission.

This will be known as the Project Status Meeting. The Project Manager will schedule all meetings and will select location. It is anticipated that most meetings will take place at Turnpike Central Administration Building located at 700 South Eisenhower Blvd., Middletown, PA 17057

- b. **Project Status Report** – At each Project Status Meeting, the PROPOSER will provide a report that details the work completed during the two weeks prior to the meeting as well as detail the work to be completed within the following two weeks. This report will include all work performed by the PROPOSERS engineers, subcontractors, and construction staff.
- c. **Problem Identification Report.** An “as required” report, identifying problem areas. The report should describe the problem and its impact on the overall project and on each affected task. It should list possible courses of action with advantages and disadvantages of each, and include PROPOSER recommendations with supporting rationale.

**Pennsylvania Turnpike Commission  
Project 10-40110-2744  
Table 1 - Equipment List**

<b>MP</b>	<b>Direction</b>	<b>Latitude/ Longitude</b>	<b>Power Source</b>	<b>Communications</b>
<b>10.20</b>	<b>EB</b>	<b>40°50'1.32"N/ 80°22'0.73"W</b>	<b>Penn Power 1641/114. 100 feet west of site.</b>	<b>Wireless to WAN via Radio Tower at 10.7 New Castle Interchange</b>
<b>48.30</b>	<b>WB</b>	<b>40°31'59.74"N/ 79°49'15.53"W</b>	<b>Penn Power 220088. 235 feet west of site.</b>	<b>Wireless to Interchange Building at MP 47.73 Allegheny Valley Interchange</b>
<b>197.25</b>	<b>WB</b>	<b>40° 9'29.34"N/ 77°40'50.38"W</b>	<b>Power available from the west end of the Kittatinny Tunnel portal or across the mainline.</b>	<b>Wireless to WAN via Antenna at 198.8 Blue Mountain west Tunnel Portal. (Antenna at tunnel portal to be supplied by others.)</b>
<b>245.70</b>	<b>EB</b>	<b>40° 11'57.16"N/ 46°48'35.53"W</b>	<b>Power available from across the mainline, with access from nearby junction box at CCTV.</b>	<b>Existing Fiber Optic Conduit and Trunk (across the roadway) to Highspire Facility.</b>
<b>317.55</b>	<b>EB</b>	<b>40° 4'11.50"N/ 75°34'4.51"W</b>	<b>POS Pole #2. 270 feet west of site.</b>	<b>Wireless to WAN via Radio Tower at 31.7.4 (Valley Forge)</b>
<b>A57.4</b>	<b>SB</b>	<b>40° 35'43.26"N/ 75°34'6.71"W</b>	<b>Lehigh Valley Interchange Building. 670 feet west of site.</b>	<b>Fiber Optic Cable to Interchange Building at Lehigh Valley Interchange MP A54.3.</b>
<b>A94.85</b>	<b>SB</b>	<b>41° 4'26.11"N/ 75°42'28.33"W</b>	<b>PTC Miller Communications Building Under the Tower.</b>	<b>Fiber Optic to WAN via Miller Building at MP 94.59 Pocono maintenance.</b>
<b>A129.55</b>	<b>SB</b>	<b>41°28'56.86"N/ 75°41'37.39"W</b>	<b>Near MP A129.55 SB</b>	<b>Wireless to WAN via Antenna at Clark Summit (includes a Repeater<sup>1</sup>)</b>

<sup>1</sup> The Repeater is to be mounted on a proposed pole along the on-ramp from US 11 NB to I-476 NB at the approximate coordinates of N 41°28'45.75" W 75°41'3.50"W. The proposer and the Commission will verify the exact site location during the design phase. The power (120VAC) for the repeater exists at approximately 50 ft from the repeater pole location. The Contractor is responsible for running service line (conduit and cable) between the power source and the proposed pole. The table provides the PROPOSER with point of service (POS) power facilities, whether they are at a specified local utility pole (Local), or are available through the Commissions facilities (Tunnel or Interchange), if available. It is the duty of the PROPOSER to identify all points of service for this project and may choose to use the information provided in the RFP, or may utilize a point of service more advantageous to their proposal. Table 2 identifies the location of the wireless RWIS sites. Table 3 distinguishes the responsibilities between the PROPOSER and the wireless service provider.

**Pennsylvania Turnpike Commission  
Project 10-40110-2744  
Table 2 – Wireless Communication Site List\***

Site Name	Latitude/ Longitude	Site Description
RWIS 10.2 EB	40°50'1.32"N 80°22'0.73"W	RWIS site with co-located wireless communications pole.
RWIS 48.3 WB	40°31'59.74"N 79°49'15.53"W	RWIS site with co-located wireless communications pole.
RWIS 197.25 WB	40° 9'29.34"N 77°40'50.38"W	RWIS site with co-located wireless communications pole.
RWIS 317.55 EB	40° 4'11.50"N 75°34'4.51"W	RWIS site with co-located wireless communications pole.
RWIS A129.55 SB	41°28'56.86"N 75°41'37.39"W	RWIS site with co-located wireless communications pole.
RWIS A129.55 SB Repeater Site	41°28'45.75"N 75°41'3.50"W	A 60' repeater pole and 30' communication pole at RWIS location is required at this site. (to be installed by the PROPOSER)

\* See Appendix I for information on wireless communication infrastructure information.

**Pennsylvania Turnpike Commission  
Project 10-40110-2744  
Table 3 – Responsibility Matrix**

Responsibility	PROPOSER	Wireless Service Provider
Procure and install communications pole (for radios/repeater), foundation, and cabinet <sup>1</sup> (power enclosure).	X	
Provide 120 VAC power and grounding system at the base of the pole (within the power enclosure)	X	
Electrical ground system and connection point that accommodates Client Radios in providing adequate electrical protection	X	
Network equipment and network cabling between pole (power enclosure) and the RWIS tower	X	
Provide internal access at the antenna mounting location and power supply mounting location to route power, grounding, and network cables inside the pole structure.	X	
Design, procure, and install UPS and battery backup at RWIS cabinets and Repeater pole site cabinet.	X	
Procure and install radio/repeater equipment and antenna on pole		X
Procure and install surge protectors at power enclosure		X
Procure and install power and network cable between radio/repeater antenna and power enclosure		X

**PROPOSER BID SHEET**

**INSTALLATION OF INTELLIGENT TRANSPORTATION SYSTEMS**  
**ROADWAY WEATHER INFORMATION SYSTEM (RWIS)**

**TABLE 4: PROPOSER BID SHEET**  
**CONTRACT NO. 10-40110-2744**

<b><u>ITEM NO.</u></b>	<b><u>Quantity</u></b>	<b><u>Unit</u></b>	<b><u>ITEM DESCRIPTION</u></b>	<b><u>UNIT PRICE</u></b>	<b><u>TOTAL ITEM COST</u></b>
0608-0001	1	LS	MOBILIZATION		
9900-0400	1	LS	RWIS 10.2 EB		
9900-0402	1	LS	RWIS 48.3 WB		
9900-0403	1	LS	RWIS 197.25 WB		
9900-0404	1	LS	RWIS 245.7 EB		
9900-0405	1	LS	RWIS 317.55 EB		
9900-0406	1	LS	RWIS A57.4 SB		
9900-0407	1	LS	RWIS A94.85 SB		
9900-0408	1	LS	RWIS A129.55 SB		
9900-0410	1	LS	SYSTEM SUPPORT EQUIPMENT		

**TOTAL**  
**PROJECT BID**

The PROPOSER **WILL NOT** include the Commission's wireless service provider's Equipment, Integration and Labor in their Total Project Bid, as this amount will be paid by the Commission. The PROPOSER **WILL NOT** have to provide the wireless service provider's costs in their Schedule of Values submission. However, the PROPOSER will provide the wireless communication infrastructure cost as identified in the Figure 1 Schedule of values.

**INSTALLATION OF INTELLIGENT TRANSPORTATION SYSTEMS  
ROADWAY WEATHER INFORMATION SYSTEMS (RWIS)  
FIGURE 1: SCHEDULE OF VALUES (SAMPLE SHEET)  
RFP NO. 10-40110-2744**

<b>Bid Item No.:</b>					
<b>Bid Item Description:</b>					
<b>Engineering:</b>	\$				
(Includes complete site, ITS and structure design.)					
<b>Foundation:</b>	\$				
(Includes complete installation - Excavation, Concrete, Rebar, Anchor Bolts)					
<b>Structure:</b>	\$				
(Includes complete installation - Fabrication, Delivery, Installation)					
<b>Control Cabinet:</b>	\$				
(Includes complete installation - Fabrication, Delivery, Installation)					
<b>ITS Equipment:</b>	\$				
(RWIS Components)					
<b>Maintenance and Protection of Traffic (MPT):</b>	\$				
<b>Power:</b>	\$				
(Includes all necessary material, equipment, labor and coordination to provide a complete power supply to the site.)					
<b>Total Communications*:</b>	\$				
<i>Fiber Optic Communications (Subcategory)</i>	\$				
(Includes all necessary material, equipment, labor and coordination to provide a fiber optic					
<i>Wireless Communications Infrastructure (Subcategory)</i>	\$				
(Includes all necessary infrastructure (power, conduit, foundations, structures, connections, wiring) material, equipment, labor and coordination to provide the base infrastructure for a wireless communications system at this site. These materials must be					
<b>Integration:</b>	\$				
<b>Testing/Training:</b>	\$				
<b>Other:</b> (All other items related to the construction of this site. i.e. guide rail, clearing and grubbing)	\$				
<b>ITEM TOTAL</b>	\$				
<b>(MUST MATCH TOTAL ON BID SHEET)</b>					

**APPENDIX A**  
**SPECIAL PROVISIONS**

## APPENDIX A SPECIAL PROVISIONS, CONCEPTUAL LOCATION PLAN

### **GENERAL**

This request for proposals (RFP) provides interested PROPOSERS with sufficient information to enable them to prepare and submit proposals for consideration by the Pennsylvania Turnpike Commission (Commission) to satisfy a need for the expansion including the design, furnishing and installation of a completely functional Roadway Weather Information System (RWIS).

Work items include, but are not limited to:

- Design, procure, install, integrate, and test eight (8) RWIS, associated structures and equipment along the Turnpike. The term “integrate” refers to the physical integration at the site and integration with the RWIS server and software at the Highspire facility.
- Provide training for Commission users and those maintaining devices.
- Design, procure, and install all required power (including UPS and battery backup) to each RWIS site and repeater pole site. Solar power is not an acceptable option.
- Design, procure, and install all required communications connections between the RWIS field sites and the Commission's Highspire facility. Communications mediums shall be through either fiber optic cable or 4.9 GHz to a Commission facility (tunnel, toll plaza, microwave tower) that has access to the Commission's Wide Area Network (WAN). No leased lines will be acceptable on this project. The PROPOSER can only utilize the Commission's wireless provider for their wireless solution on this project. The Commission will accept no other wireless solution. **Contact Daniel Buckley (Telephone - 978-442-4452 – email [buckleyd@harris.com](mailto:buckleyd@harris.com)) to coordinate wireless services for this project. Complete all coordination with the Commission's wireless service provider prior to the proposal due date.**
- Utilize the existing RWIS server and control software to integrate and operate all existing and proposed RWIS sites. Verify the existing RWIS firmware is identical to the firmware recently installed between MP 162 – MP 172. The RWIS units should be compatible to be controlled by the Quixote Navigator Software, or similar control software. Any new software solution must meet all of the functional requirements within the RFP.
- The existing RWIS server at the commission's Highspire office is deemed sufficient for additional RWIS to be installed as part of the project. However, if the PROPOSER identifies the need for an additional server, the PROPOSER shall procure, furnish, and install one (1) server to house the RWIS client server control software to operate the existing and proposed RWIS stations. This server shall be housed within the Commission's Highspire office located at 700 South Eisenhower Blvd., Middletown, PA 17057. The RWIS central software will be upgraded under another contract (ITS Retrofit MP 162.0 to 172.0). The PROPOSER will verify that the proposed RWIS sites are successfully integrated into the new software.
- Provide testing of all equipment to illustrate full RWIS functionality in the field and at the Commission Highspire, PA location.



The designation “Engineer” in the RFP documents shall refer to the appropriate Turnpike Commission point of contact, which will be provided upon Notice-To-Proceed to the PROPOSER.

### **RESTRICTION OF OPERATIONS DURING HOLIDAY PERIODS**

Arrange schedule to provide maximum use of the roadway during holiday periods. Have all travel lanes, each direction, and all interchange ramps available to traffic during the holiday periods and special events. Applicable holiday periods and special events include:

#### **2010 Holiday Schedule**

VETERANS DAY .....	From 3:00 P.M., local time, Tuesday, November 9 to 6:00 A.M., local time, Monday, November 15, 2010.
THANKSGIVING DAY .....	From 3:00 P.M., local time, Tuesday, November 23 to 6:00 A.M., local time, Monday, November 29, 2010.
CHRISTMAS AND NEW YEARS.....	From 3:00 P.M., local time, Thursday, December 23, 2010, to 6:00 A.M., local time, Monday, January 3, 2011.

#### **2011 Holiday schedule**

EASTER	From 3:00 P.M., local time, Thursday, April 21 to 6:00 A.M., local time, Tuesday, April 26, 2011.
MEMORIAL DAY .....	From 3:00 P.M., local time, Thursday, May 26 to 6:00 A.M., local time, Wednesday, June 1, 2011.
INDEPENDENCE DAY .....	From 3:00 P.M., local time, Friday, July 1 to 6:00 A.M., local time, Monday, July 11, 2011.

LABOR DAY .....	From 3:00 P.M., local time, Thursday, September 1 to 6:00 A.M., local time, Wednesday, September 7, 2011.
COLUMBUS DAY.....	From 3:00 P.M., local time, Friday, October 7 to 6:00 A.M., local time, Tuesday, October 11, 2011.
VETERANS DAY .....	From 3:00 P.M., local time, Wednesday, November 9 to 6:00 A.M., local time, Monday, November 14, 2011.
THANKSGIVING DAY .....	From 3:00 P.M., local time, Tuesday, November 22 to 6:00 A.M., local time, Monday, November 28, 2011.
CHRISTMAS AND NEW YEARS.....	From 3:00 P.M., local time, Thursday, December 22, 2011, to 6:00 A.M., local time, Tuesday, January 3, 2012.

### **2011 Special Events**

POCONO 500 RACE.....	From 3:00 P.M., local time, Thursday, June 2 to 6:00 A.M., local time, Monday, June 6, 2011.
PENNSYLVANIA 500 RACE.....	From 3:00 P.M., local time, Thursday, July 28 to 6:00 A.M., local time, Monday, August 1, 2011.

### **PROTECTION AND COORDINATION OF UTILITIES**

Ascertain and locate any utility lines in the vicinity of the entire project and take all precautions to fully protect the (utility) facility and service. Prior to performing any work in the vicinity of any underground or overhead line or service, advise the facility owner at least 72 hours in advance of initiating work and provide all measures for protection in accordance with the National Electric Safety Code, the Occupational Safety and Health Administration's Regulations and as deemed necessary by the facility owner with the Engineer's concurrence. Coordinate protection and relocation of utilities with the facility owner.

Attention is directed to the Provisions of Act 287 of 1974 and subsequent amendments, which specify the responsibilities in regard to public health and safety during excavation and demolition operations in areas of underground utilities. Contact the One Call System at 1-800-242-1776 for all facilities prior to performing underground work.

Immediately report to the facility owner, including the Department of Transportation and the Commission, any break, leak, or other damage to the lines or protective coatings made or discovered during the work and immediately alert the occupants of the premises and the employees of any emergency created or discovered.

Perform all work required for the location, replacement, adjustment or reconstruction of underground utilities in accordance with the Section 105.06.

The Commission may have both underground and aerial utility facilities within the project limits, specifically the Maintenance, Interchange, Tunnel, and Service Plaza area. In addition to the service lines, the Commission has lighting and various other facilities throughout the Turnpike system. The Commission's Tradesman Superintendent may be available to provide information about these sites and can be contacted through the Representative.

No work by facility owners with identified utility facilities within the project limits or the Commission's right-of-way is anticipated. The correctness of the information is not guaranteed and the Commission will not pay costs incurred by the PROPOSER or facility owners for work performed for their convenience, unless prior written consent is obtained from the Commission.

This work is incidental to the project.

### **COORDINATION OF WORK**

Contractors working on either the same or the adjacent projects are to cooperate with each other as part of their own scope of work and as directed. Without in any way limiting the foregoing requirement, cooperate and coordinate to the extent necessary to satisfactorily conclude all work essential for the operation of the Turnpike. Include all considerations, financial and otherwise, resulting from this requirement herein to interface, coordinate, and cooperate with other PROPOSER'S working the same or other areas, as well as with the Commission and its authorized representative.

Arrange the work and place and dispose of the materials being used so as not to interfere with the operations of the other PROPOSER'S within the limits of, or adjacent to the project.

If any part of the work depends on proper execution or results upon the work of any other PROPOSER, within 2 working days of the start of the work, inspect the work of the other PROPOSER'S and report in writing to the Commission any apparent discrepancies, interferences, defects, or delays in such work that render it unsuitable for such proper execution and results. Failure to so inspect and report will constitute an acceptance of the other PROPOSER'S work as fit and proper to receive this work, except as to defects that may develop in the other PROPOSER'S work after the execution of the work hereunder.

If any PROPOSER does not complete the various portions of the work in general harmony, and another PROPOSER is caused damage or injury by the failure to so act in harmony, the PROPOSER damaged or injured is to settle with the PROPOSER causing the damage or injury by agreement or arbitrate such claim or disputes. The Commission, however, is not liable to any PROPOSER for any increased costs or damages resulting from the defective work, interference, final construction decisions, failure to coordinate and cooperate, or delays of other PROPOSER'S.

## **PROJECT SCHEDULE AND LIQUIDATED DAMAGES**

The PROPOSER shall supply, within their proposal, a Project Schedule depicting at a minimum the following project milestones:

- Notice-to-Proceed (NTP)
- Submission of System Level Block Diagram
- Submission of Complete List of Equipment and Materials
- Submission of Engineering Design Package
- Final Approval of Engineering Design Package
- Begin Procurement of Materials
- Pre-Construction Meeting
- Start of Construction
- Installation of RWIS
- Installation of RWIS server and RWIS head-end equipment.
- Submission of Final Testing and Training Documents
- Completion of construction and RWIS System Acceptance Testing (SAT)
- Receive the Commission's Approval to begin 30-Day Operational Acceptance Testing (OAT)
- Completion of 30-Day Operational Acceptance Testing (OAT)
- Submission of Final Documentation
- Submission of any remaining documents
- Overall project completion

The PROPOSER shall utilize all available time, including multiple shifts, to complete the contract within the required time limit.

Complete all work and have all equipment pass final system acceptance tests within time frame presented in the schedule milestones. The warranty period will follow the final approval of the operational acceptance test milestone.

The anticipated time frame to complete the project is approximately twelve (12) months. The Commission reserves the right to negotiate these durations with the PROPOSER prior to contract award. The PROPOSER may be subject to liquidated damages in the amount of one thousand two hundred dollars (\$1,200.00) for each calendar day that any work under the contract remains after the required completion dates. This provision shall continue in full force and effect for a maximum of 180 days following termination of the contract.

Even though the Commission's wireless service provider will be paid by the Commission for their wireless service on this project, as agreed to between the PROPOSER and the wireless service provider, the PROPOSER is still responsible that all work at each site is completed within the 12 month project time frame to create fully operational RWIS systems. The Commission cannot be held responsible by the PROPOSER for any delays in the design, furnishing, installation, and integration of wireless services provided by wireless service provider.

Liquidated damages shall be assessed only after the Commission notifies the PROPOSER in writing of the failure to meet the milestones, as detailed in the approved Final Project Schedule.

## **MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION**

A single lane traffic pattern for a maximum of 3-miles in length, closing the right, right and center, or left lane, will be provided by the Turnpike Maintenance Department for daylight hours, Monday through Thursday. No work will be performed during holiday periods. Applicable holiday periods are included as an attachment to the contract (Appendix A – Special Provisions). When requested by the PROPOSER and approved by the Representative an additional single lane traffic pattern may be used to accommodate the construction sequence. Traffic patterns will be removed daily. For work performed on the shoulder or within 30 feet from the back edge of the shoulder, the contractor will be responsible to setup and to follow PTS-910 *Stationary Shoulder Closure with Channelizing Devices*. The contractor shall meet with the Commission and agree upon the Maintenance and Protection of Traffic for all project locations.

Perform maintenance and protection of traffic in accordance with the Commission's PTS-900 through PTS-980 standards, and Section 901 of the Commissions Specifications. The Commission will provide, through its maintenance facilities single lane closures required for this project. Allowable lane closures are available each day from 10 AM – 2 PM Monday through Thursday. The PROPOSER is responsible for all the required shoulder closure. The PROPOSER is required to coordinate all closure activities with the project manager and must provide a minimum of 10 working days notice for the lane closure.

The PROPOSER, the Representative, and Maintenance Foreman will coordinate the use and relocation of the traffic pattern.

Coordinate all lane closures at interchange toll plazas and all work at service plazas with the Representative. The Representative will notify and coordinate work activities with the Commission's Fare Collection Personnel and Service Plaza Personnel. Notify the Representative at least two (2) weeks prior to work effecting the interchange areas. Maintain access for emergency and authorized vehicles to the interchange building(s) at all times.

The PROPOSER is cautioned that other Commission Contractor(s) may be working adjacent to the project areas during portions of this contract period. The Representative will specify the working sequence of the contracts in order to facilitate coordinated traffic control operations.

Furnish equipment working adjacent to traffic with a yellow flashing light attached to the equipment to indicate its outer limit, visible 360 degrees. Lights are to be in accordance with Section 901 (Appendix J).

Ensure that all equipment approaches, enters, and departs from working areas in the direction of and with the normal adjacent traffic flow.

Schedule and execute work, in cooperation with the Representative and Commission Maintenance Foreman, to present the least interference to and impedance of traffic and complete all operations within the specified contract time.

Design, furnish, install and maintain all required lights, guides, sandbags and appurtenances as deemed necessary by the Engineer for the proper maintenance and protection of traffic and to warn of any obstruction or hazard to traffic. Use Type A and Type B flasher units and Type C steady burn units on this project. Furnish, install, and maintain all shadow vehicles.

Provide two (2) contact persons 24 hours a day that are able to respond within one (1) hour of notification for incidents and emergencies. Provide the name and telephone numbers to the Commission's Traffic Operations Center for distribution to the State Police, emergency personnel and the Commission's District Maintenance Managers.

During any highway incidents/emergencies requiring an Incident Commander, participate in the Unified Command System under direction of the designated on-scene Incident Commander (State Police or other State Agency). Provide any available equipment necessary to facilitate the opening of lanes to traffic as directed by the Inspector in Charge.

The PROPOSER shall refer to *Restriction of Operations During Holiday Periods* section for periods of construction restrictions.

## **EROSION AND SEDIMENTATION CONTROL DURING CONSTRUCTION**

Description - Provide, install, and maintain erosion control measures as indicated in Sections 845 and 865, and as directed by the Engineer. Perform all construction in a manner that controls pollution and soil erosion and adhere to the following:

A. Apply water to access roads, haul roads, and other work areas to keep dust within tolerable limits. Ensure that water used for sprinkling is completely additive free and approved by the Engineer. Use no material other than water, as specified herein, for dust control.

B. Locate equipment repair, maintenance, and staging areas so that chemicals, fuels, lubricants, etc., will not discharge into streams, drainage features, watercourses, or wetlands.

Construction - During the construction operations, take the following erosion and sediment control measures as specified herein and/or shown in the standard drawings.

- A. Reduce to the greatest extent practicable the area and duration of exposure of readily erodible soils.
- B. Retard the rate of runoff and trap sediment by utilizing inlet protection, silt fence barriers, rock filter outlets, and dewatering basins.
- C. Direct all pump discharges resulting from dewatering operations to a suitable sediment trap.
- D. Protect the soils by seeding, temporary vegetation and/or mulching.
- E. Complete and protect segments of work as rapidly as is consistent with construction schedules.
- F. Isolate any active flow present at the time of ditch regarding by sand bagging, pumping or other suitable means.
- G. Stabilize all ditches within twenty (20) days.

If work is suspended for any appreciable length of time, implement temporary measures to control erosion. Temporary measures may include, but are not limited to diverting surface water from disturbed areas, sloping the top of fills in the upstream direction, diversions, mulching, and seeding. Soils or topsoil maintained in small stockpiles or in trucks for a short duration may be protected against erosion by covering with polyethylene or other plastic or rubber sheeting.

Upon permanent stabilization of all areas disturbed by construction, remove sediment from all control devices and remove all silt fence barriers from the site. Unless otherwise approved by the Engineer, dispose of all erosion and sediment control devices off site.

## **GENERAL PROJECT REQUIREMENTS**

Description - This section describes the general requirements that the PROPOSER has to meet in furnishing and installation of a completely functional Roadway Weather Information System (RWIS). Items not specifically covered in these Special Provisions will be governed by the applicable sections of the 2007 Commonwealth of Pennsylvania, Department of Transportation Specifications, Publication 408/2007-7, and all applicable publications. Standard drawings include:

## **PENNSYLVANIA TURNPIKE COMMISSION STANDARD DRAWINGS**

PTS-900	MAINTENANCE AND PROTECTION OF TRAFFIC, NOV. 2008 (SHEETS 1 TO 5, 8 OF 10)
PTS-910	MAINTENANCE AND PROTECTION OF TRAFFIC, NOV. 2008 (SHEETS 1 TO 4, 7 OF 7)
PTS-980	MISCELLANEOUS DETAILS (SHEET 2 OF 2), NOV. 2008
PTS-340	ROAD WEATHER INFORMATION SYSTEM (RWIS) DETAILS, FEB. 2009 (SHEET 1 OF 1)
PTS-350	ITS CONDUIT AND JUNCTION BOXES, FEB. 2009 (SHEETS 1, 2 OF 2)
PTS-355	STRUCTURE MOUNTED ITS CONDUIT, FEB. 2009 (SHEETS 1 TO 8 OF 8)
PTS-360	CONTROLLER CABINET FOUNDATIONS, FEB. 2009 (SHEET 1 OF 1)
PTS-370	UTILITY SERVICE DETAILS, FEB. 2009 (SHEETS 1 TO 4 OF 4)
PTS-380	ITS DEVICE GROUNDING DETAILS, FEB. 2009 (SHEET 1 OF 1)

## **PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS**

BC-736M	REINFORCEMENT BAR FABRICATION DETAILS, January 21, 2003
RC-10M	CLASSIFICATION OF EARTHWORK, April 15, 2004
RC-11M	CLASSIFICATION OF EARTHWORK FOR STRUCTURES, April 15, 2004
RC-12M	BACKFILL AT STRUCTURES, March 30, 2006
RC-54M	BARRIER PLACEMENT AT OBSTRUCTIONS, March 30, 2006
RC-60M	RIGHT – OF – WAY FENCE, April 15, 2004
RC-70M	EROSION AND SEDIMENT POLLUTION CONTROL, August 29, 2008
RC-80M	HIGHWAY LIGHTING FOUNDATIONS, April 15, 2004
RC-82M	HIGHWAY LIGHTING JUNCTION BOXES, April 15, 2004 CAST-IN-PLACE OR PRECAST
RC-83M	HIGHWAY LIGHTING, April 15, 2004
TC-7804	ELECTRICAL DISTRIBUTION, June 30, 1989

### **A. Scope of Work**

Perform the following major tasks, at a minimum, in order to provide completely functional and operational RWIS:

1. Design, furnish, and install eight (8) Roadway Weather Information Systems including tower structure and foundation, control cabinet, field device (as noted in Appendix B), all required head-end equipment to convey the RWIS data from the Commissions Wide Area Network (WAN) and server/workstation to operate the system at the Commission's Highspire



2. Furnish and install all required field power (including UPS and battery backup) and communications necessary to make the field and Highspire facility systems fully operational. The PROPOSER is required to coordinate with the utility companies for all power services. Utility accounts will be created utilizing the Commission's contact information. Upon initial installation of these services, all monthly invoices will be sent directly to the Commission's for payment. The PROPOSER is responsible for all set-up and initially services fees to obtain the services.
3. Coordinate with the Commission to access their Wide Area Network (WAN) through either fiber optic cable or wireless communications (to facilities with WAN connections, such as toll plazas tunnels or maintenance facilities). All wireless communications will be coordinated through the Commission and will utilize the Commissions wireless service provider's hardware to connect to existing WAN radio towers or before mentioned facilities. Dial-up or **Leased line communications will not be considered as an acceptable means of communications to devices in this project.** Install complete communications system (fiber optic, wireless or a hybrid of the two) to the aforementioned equipment. The PROPOSER can only utilize the Commissions wireless provider for their wireless solution on this project. No other wireless solution will be accepted by the Commission. **Contact Daniel Buckley (Telephone - 978-442-4452 – email [buckleyd@harris.com](mailto:buckleyd@harris.com)) to coordinate wireless services for this project. Complete all coordination with Commissions wireless service provider prior to the proposal due date.**
4. If using wireless communication system, provide pole, foundation, and cabinet required at the wireless equipment site location (including repeater locations.) Furnish and install all required field power (including UPS and battery backup) and communications necessary to make the wireless equipment operational. The wireless equipment will be furnished and installed by the wireless service provider.
5. Follow the systems engineering process during the project design and implementation phases.
6. Furnish and install conduit, fittings, terminations, termination panels, junction boxes, cable, cable strain relief hardware and other ancillary accessories.
7. Furnish and install surge and lightning protection for cables entering and leaving all cabinets (RWIS, communications, and power).
8. Provide training and operations support equipment as per Appendix D.

9. Conduct all required tests, and submit test procedures and results to the Engineer.
10. Provide all incidental equipment and perform all necessary tasks to provide completely integrated (as System Acceptance Tested) and operational RWIS systems.
11. Provide as built plan and all necessary documentation.

## B. Equipment Requirements

### 1. General

- a. Design and procure all equipment in a manner to minimize the number of manufacturers.
- b. Procure all material and equipment, which meet the latest applicable standards of National Electrical Manufacturers Association (NEMA), Electronics Industries Association (EIA), National Electric Code (NEC) Underwriters Laboratory (UL), Publication 408, and these Special Provisions.
- c. Procure the equipment from a manufacturer or manufacturers who have been successfully engaged in the manufacture of such equipment for a period of at least five years.
- d. Submit certification(s) from the various manufacturer(s) of equipment supplied under this contract that they will carry in factory stock, for at least 10 years, all necessary parts and stock items to keep the equipment operational.

### 2. Parts and Material

In the selection of parts and materials, fulfillment of the requirements of these Special Provisions is of prime consideration. Design equipment to utilize the latest available techniques and utilize the minimum number of different parts, subassemblies, circuits, cards and/or modules, to maximize standardization and commonality.

### 3. Electrical Components

Use electrical components that are generally industry standard items available from several manufacturers. Comply with the latest industry standard practices, specifications and tests, or approved alternatives for

all the components, being furnished under this contract to assure reliable operation of all the equipment.

#### 4. Mechanical Components

##### a. Hardware

Provide stainless steel external screws, nuts and lock washers. Do not use self-tapping screws. For internal screws, nuts and lock washers, use corrosion resistant material or material suitably plated to resist corrosion. Use material in accordance with the highest industry practices.

##### b. Material

Provide parts made of corrosion resistant material, such as plastic, stainless steel, aluminum, or brass; or parts treated to resist corrosion, such as cadmium plating or galvanizing.

##### c. Component Mounting and Identification

Identify operating circuit components mounted on circuit boards by identifying characters, which are legible and permanently printed on the circuit boards, and by the use of complete assembly drawings showing all components with values or by JEDEC numbers. Reference the identifying characters to their respective components in the schematic diagram and in the parts list.

#### C. Control Software

Currently, the Turnpike has an existing server (with Windows 2003) and RWIS control software (Scan Web version 5.7 from Quixote Transportation Technologies (QTT), contact:

Distributor Contact:

Mr. Kevin Francis

M.H. Corbin Inc.

8240 Estates Court, Plain City, OH 43064.

Contact Number: (614) 873-5216)

The most recent version of the Scan Web software or compatible central software must be used for this project and must be able to provide the same functionalities as the existing software with the existing and proposed field components. The PROPOSER shall use the existing RWIS control software that provides a secure web-based access utilizing a username and password login. The existing server at the Commission's Highspire office is capable of accommodating additional RWIS installed as part of this project. The server is housed at the Commission's Highspire facility.

The PROPOSER shall assume responsibility for providing a working communications system and a fully functional system, between the field devices and the Commission's Highspire facility, using the communications equipment installed by the PROPOSER, lines electric companies, and communications links provided solely by the PROPOSER. If required, the PROPOSER is responsible for providing control software for a fully functional system.

The system should operate 24 hours per day, with minimum operator attention required. Operator intervention shall be limited to RWIS operations, modifying system timing, responding to malfunction alarms or indicators, and diagnosing component failures.

#### D. Design and Construction

Design and construct equipment such that performance will not be impaired after it has been subjected to shock and vibration caused by installation, transportation, maintenance handling, and normal use.

Install surge and lightning protection for all electrical and communication cables that are leaving or entering a cabinet. Provide resettable surge and lightning protection devices that can be subjected to multiple surges.

During construction work on the Commission's network and communication rooms, protect all equipment using dust-proof covers. Do not remove the dust-proof protection until after the work is completed and the work area cleaned.

##### 1. Electrical

###### a. Design Life

Design all components in their normal circuit applications to operate continuously for at least 10 years.

###### b. Power Requirements

Provide equipment that meets the performance requirements at the specified power input level plus or minus 5%.

###### c. Primary Input Power Interruption

Provide equipment such that in the event of a power failure, proper operation will commence immediately after restoration of power without creating false information or malfunction.

###### d. High Frequency Interference and Line Voltage Transients

Protect the equipment power supply circuitry against high frequency electrical interference and line voltage transients.

e. Wire Size

Procure all wiring of such size to meet the requirements of the National Electric Code.

f. Wire Identification

Identify all wiring connected to terminal strips by the use of insulated preprinted sleeving slipped over the wire before final attachment.

g. Wire Dressing

Procure wires cut to proper length before assembly. Do not double back wires to take up slack. Lace wires neatly into cables with nylon lacing or plastic straps. Secure cables with suitable clamps. Provide identification tags for all cables.

h. Cable Termination

Terminate all cables, as required, using appropriate termination panels, with built-in surge protection and test access ports.

i. Protection

Provide equipment containing readily accessible, manually replaceable circuit protection devices such as fuses, for equipment and power source protection.

j. Fail Safe

Provide and install equipment such that failure of individual equipment does not cause failure of the subsystem or system.

k. Static, Lightning and Surge Protection

Fully protect each piece of equipment from damage due to static electricity accumulation or discharge during unpacking, normal handling, and installation. Provide static electricity protection by case construction and by the use of protective devices on wires connected to the equipment. Use material and type of finish, which will not permit the accumulation of static electric charge. Provide a static-inhibiting device that can fit on a person's wrist, in all the cabinets. Protect all electrical and communication cables entering or leaving the

equipment cabinets and which might be subject to damage, with bleeder resistors, current limiting resistors, zener diodes, MOVs, or other suitable means of limiting momentary current surges. Provide in-line, re-settable surge protection to avoid damage from lightning induced surges or other power line transients for all cables entering and leaving all cabinets. Provide transient suppression devices meeting the requirements of NEMA TS-2 specifications. Surge protection is incidental to the cost of equipment. Include surge protection details in the shop drawings for approval by the Engineer.

Coordinate with the equipment and surge protection device manufacturers to determine in-line voltage requirements.

## 2. Mechanical

### a. Modular Design

Design equipment in a modular fashion such that major portions may be readily replaced in the field.

### b. Keying

Mechanically key modules of unlike functions to prevent insertion into the wrong socket or connector.

### c. Identification

Clearly identify all modules and assemblies with name, model number, serial number and any other pertinent information required to facilitate equipment maintenance.

## E. Maintenance Provisions

Procure equipment designed for ease of maintenance. Make all component parts readily accessible for inspection and maintenance. Provide test points utilizing test jacks or equivalent to enable testing and troubleshooting with the equipment operating.

## F. Environmental Design Requirements

Provide equipment meeting all of its specified requirements during and after exposure to any combination of the specified environmental and power line conditions.

Temperature Range: -30 degrees C to +74 degrees C, unless otherwise specified for each piece of equipment or subsystem.

Relative Humidity: Not to exceed 95%, non-condensing.

#### G. Personnel Safety

Procure equipment with provisions for personnel safety designed in. Design to prevent reversed assembly or installation of connectors, fasteners, etc., where possible malfunction or personnel hazards might occur. Properly ground in accordance with the requirements of the National Electric Code all external conductive material on the equipment. Provide electrical equipment having provisions to limit ground fault current and leakage current to levels below that prescribed by Underwriters Laboratories, Inc.

#### H. Quality Assurance Provisions

In cases where design tests are specified herein, documentation may be provided indicating that such tests have previously been satisfactorily completed and additional tests will not be required. Subject equipment to all tests as specified in Appendix D to determine conformance with all the applicable requirements. The Engineer reserves the right to have his/her representative witness all tests. The results of each test will be compared with the requirements specified herein. Failure to conform to requirements for any test will be subject to rejection by the Engineer.

Rejected equipment may be offered again for retest provided all non-compliances have been corrected and retested by the PROPOSER. Final inspection and acceptance of equipment will be made after delivery and successful completion of final system acceptance tests.

#### I. Preparation for Delivery

Package equipment to prevent shipping damage. All equipment must be in an undamaged and operational condition after delivery and unpacking in order to be accepted. Make all repairs or replacements to the satisfaction of the Engineer at no additional cost.

#### J. Field Cabinet Locks and Keys

Provide all cabinets with locks using an interchangeable core, as directed by the Commission. Number (No.) 2 key locks will not be acceptable. Following the successful completion of system acceptance test, provide the Commission with five sets of new keys for all field cabinets, with all cabinets keyed alike.

#### K. Trenches

At the end of each working day, backfill all the trenches to a point that is within 10 feet from the end of each trench. Cover the 10-foot length of the open trench with a ½-inch thick steel plate.

Mark on the center of each steel plate used for decking over trenches the following information:

PROPOSER's Name  
Contact Person  
Emergency Telephone Number

Each letter will be four inches high, in a space four inches wide, and each stroke forming each character will be 3/4 inch wide. Provide clear and legible lettering.

Use the appropriate method to label the trench plate so that the lettering will not be eradicated due to traffic or people movement over the trench plate. When placing trench plates over excavations, secure the plates to the surface to prevent lateral movement avoiding an unsafe condition. Between the period of November 1st and April 1st, notify the Engineer of any steel plates used to cover excavation made in snow emergency routes.

#### L. Exposed Conduit

Use conduit made of Galvanized Rigid Steel (GRS) for all structure-mounted conduit or exposed conduit, unless otherwise noted in the contract drawings.

## **DOCUMENTATION**

### **Request for Proposal Requirements**

Equipment submittals should be provided by the PROPOSER within response to the RFP to demonstrate that the equipment initially proposed for the project has the capability to meet the functional objectives and specifications required by these Special Provisions. The level of effort required for the submittal material could vary depending on the complexity of the equipment and the degree to which the proposed equipment is off-the-shelf or custom in nature. **No cost data is to be included within the initial equipment submission.**

Provide an overall project schedule detailing, at a minimum, the project milestones that will be followed by the PROPOSER to demonstrate compliance with the construction schedule. This schedule should detail meetings, design, equipment catalog cut sheet submissions, procurement, installation, testing, training, final documentation submission, and maintenance tasks. This schedule must be approved by the Commission.

### **Design Submission Requirements**

Submit within 10-days following Notice-to-Proceed (NTP) a Final project schedule in MS Schedule or Primavera detailing, at a minimum, those tasks starting on page A4.

Submit within 30 calendar days following Notice-to-Proceed, system level block diagrams on 22 in. (H) x 34 in. (W) sheets, which demonstrate the feasibility of the



system as well as the interconnection of all equipment. Include in the block diagrams, the electrical and mechanical details and the interconnection details showing equipment part numbers, cable type, connectors, etc. Use separate sheets for field, central and complete system configurations. Include block diagrams for every major functional area.

Furnish an updated (from proposal) and complete list of equipment and material within 45 calendar days after Notice to Proceed. Include the name, manufacturer, part number and material specifications as applicable.

Submit for final approval the Engineering Design. The PROPOSER must receive approval of the Engineering Design within a maximum of 2-months from the Notice-To-Proceed, and is responsible to provide all documents to the Commission allowing the Commission a maximum of 10 business days to provide review comments.

Design documentation consists of all drawings and text required to define the configuration of the system including both hardware and software documentation. The PROPOSER will be provided electronic base plan drawings (in PDF or MicroStation format) at the time of Notice-to-Proceed. The PROPOSER is required to provide the following sheets in the design set, which will be signed and sealed by a Professional Engineer registered in the Commonwealth of Pennsylvania:

- Title Sheet
- Index Sheet
- System Block Diagram
- Summary of Equipment Sheets
- Communication system Details
- Highspire TOC Equipment Block Diagram
- Cabinet Block Diagrams
- Miscellaneous Details
- Cable and Conduit Attachment Details
- Roadway and Shoulder Closure Details
- Typical Electrical Details
- Typical Utility Pole Details
- Structural and Foundations General Notes
- RWIS Structure Details Sheets
- ITS General Notes
- ITS Legend
- ITS Plan Sheets (RWIS) For Each Location.
- Maintenance and Protection of Traffic Plans

### CADD Requirements

All drawings including ITS construction plans, details, right-of-way plans and plots, profiles, typical sections, cross sections, shop drawings, details, schematics, etc. to be provided under this contract shall be accomplished and developed using computer-aided design and drafting (CADD) software and procedures conforming to the following criteria.

All CADD data shall be supplied in the DWG/DGN electronic digital format. No translations will be accepted. The PROPOSER shall ensure that all digital files and data (e.g., model files, reference files and resource files) are compatible with the Commissions primary CADD system and adhere to the standards and requirements specified herein. The term “compatible” means that data can be accessed directly by the target CADD system without translation, preprocessing, or post processing of the electronic digital data files. It is the responsibility of the consultant to ensure this level of compatibility.

CADD drawings shall be prepared in accordance with the Pennsylvania Turnpike Commission CADD Standards Manual. All other CADD Standards not covered by the Commissions CADD Standards Manual must be in accordance with PennDOT Highway Plans Presentation Manual, Publication 14M, April 2007 Edition. Standard drawing size shall be ANSI D (34” x 22”) and the PTC CADD Standard file naming conventions for model and sheet files shall be used.

The PROPOSER shall submit a written request for approval of any deviations from the Commission’s established CADD standard. No deviations from the Commission’s established CADD standard will be permitted unless prior written approval of such deviation has been received from the Commission.

A copy of all CADD data and files developed under this contract shall be delivered to the Commission as part of the Final submission.

### Submissions

Provide five (5) sets of all descriptive material, (manuals, cut-sheets, drawings, brochures, etc.), for each type of equipment and apparatus proposed for this project to demonstrate that the intended equipment or integration of intended equipment will meet the functional objectives and specifications of the system. Documentation for each subsystem shall be grouped together into one submission to provide a single complete subsystem package. The PROPOSER shall not submit incomplete or portions of a subsystem documentation, unless approved by the Commission. If the PROPOSER does not receive prior approval to transmit an incomplete submission, the submission will be immediately rejected. Include in these documents sufficient technical data for complete evaluation of the proposed system by the Engineer. Provide original manuals, brochures, or copies equal to originals.

Describe methods of expansion and maximum capacities.

Provide all user manuals and maintenance manuals for third party equipment.

The PROPOSER will provide five (5) hard copies and one (1) electronic version (PDF format) of all documents transmitted for review. The Commission will be allowed a maximum of 10 calendar days to provide review comments to the PROPOSER for any documents submitted for review. Provide the following project documentation:

## A. Equipment Manuals

Provide five (5) hard copies and one (1) electronic file (PDF format) of operating, maintenance and installation manuals for each type of equipment item to be furnished. Include in the manuals sufficient information to operate and maintain the equipment including schematic wiring and interconnection diagrams; complete instructions for proper installation including equipment outlines, mounting, weight, power and cooling requirements; a complete parts list and a list of recommended spares.

Include text, which completely describes all functional capabilities of the equipment. Explain all adjustments, how they are performed and their effect on equipment operation. Include flow charts, which describe troubleshooting procedures in a logical manner. Define expected signal levels and waveforms at key test points. Describe required test equipment and incorporate descriptions of its use in manual sections dealing with maintenance and repair of equipment items.

Submit test procedures and checklists required for the various stages of equipment tests as described in Appendix D.

Include information necessary for the proper installation, start-up, initialization, operation and fine-tuning of the equipment item.

Include environmental and operational specifications such as operating temperature range, power requirements, equipment weight, special handling considerations and equipment power dissipation rates and cooling requirements.

Submit all manuals to the Engineer for approval at least 30 calendar days prior to the anticipated start of the System Acceptance Testing for that equipment item.

## B. Shop Drawings

Submit five (5) hard copies and one (1) electronic file (PDF format) of shop drawings on 22 in. (H) x 34 in. (W) sheets.

Include, at a minimum the following in shop drawings:

1. Wiring Diagrams
2. Installation Drawings
3. Detail Drawings
4. Catalog information

## C. Control Cabinet and Service Panel Drawings

Provide drawings, which show all terminals, terminations and connections within each equipment cabinet. At each terminal, illustrate the terminal designation for the other end

of the wire or cable. Cross-reference connections that go to equipment harnesses or connectors to the nomenclature used in that equipment's manual.

Tailor drawings to each individual cabinet.

Submit all drawings to be attached in cabinets to the Engineer for approval at least 30 calendar days prior to the system acceptance testing. Supply marked up copies of all cabinet drawings to the Engineer at the time of cabinet installation. Enclose drawings in a clear, plastic, waterproof enclosure.

Provide to the Engineer five (5) hard copy sets and one (1) electronic (PDF format) of final reproducible Mylar originals and four copies for each set of control cabinet and service panel drawings within at least 14 days following the approval of the 30-day operational test.

#### D. Installation Summary

Compile and furnish as-built installation summaries within at least 14 days of start of the 30-day operational test for each field installation. This summary will include the following information:

1. Equipment inventory including quantities of all equipment supplied under this contract, model number, manufacturer, and distributors for all equipment.
2. Cable lists specifying cable, wire pair and connector and pin assignments for all signal, power and ground leads.
3. Composite drawing of the system.

The Engineer has the right to stop the 30-day operational test if the installation summaries are not submitted within at least 14 days of the start of the test.

#### E. System Operations and Maintenance Manuals

Develop and deliver comprehensive systems operation and maintenance manuals for all the systems furnished under this contract. The objective of each manual is to present a systems oriented view of the operation and maintenance requirements of the system. Include a detailed functional description of the system. Include a description and streamlined step-by-step procedure for all routine operating events. Include equipment preventative maintenance procedures and equipment fine-tuning and adjustment procedures.

Submit all manuals to the Engineer for approval at least 14 calendar days prior to the anticipated start of the 30-day operational test.

#### Final Documentation Submission Requirements

The PROPOSER will provide five (5) hard copies and an electronic version (PDF format) of all documents transmitted as final documents and will include:

A. As-Built Drawings and Details

Submit all As-Built drawings for the RWIS locations. As-Builts and details shall be on 22' x 34" paper, as well as in PDF format. Include all As-Built plans, wiring diagrams, installation plans, cabinet diagrams, service panel drawings and detail drawings.

B. Final versions of all system operations and maintenance manuals (System Maintenance Manual, System Operator and Administrator Manuals)

C. All equipment and system/subsystem Warranties

D. All manufacturer equipment manuals

E. All final NTCIP compliance documentation, if applicable.

F. All submissions and correspondence will be through the use of the Commission's Electronic Construction Documentation System (Constructware). Training and support for Constructware will be provided by the Commission.

### Payment

The payment schedule for the aforementioned items will be as follows:

- Project Management is incidental to other bid items and will not be paid separately.
- Mobilization

Section 608.1 Description. Revise this section by adding the following:

Include in negotiations with DBE subcontractors the opportunity to identify an item for their mobilization. Include any amounts agreed to in the contract lump sum bid price for mobilization, also list agreed to amounts for each DBE subcontractor on Attachment A (part of documentation required by special provisions Disadvantaged Business Utilization Requirements).

Section 608.4 Measurement and Payment. Revise completely to read:

- Lump Sum

Will be paid as specified in Section 110.05, and in accordance with the following schedule:

- (a) Submit the detailed construction schedule specified in Section 108.03 indicating there on the starting date of work subcontracted to DBE's. One month prior to the scheduled start of the subcontracted DBE work, but not earlier than the Notice to Proceed, 25 % of the amount shown on Attachment A for mobilization will be paid. The remaining 75% of the amount shown on Attachment A for mobilization will be paid in three (3) equal payments, each payment made when subcontracted DBE work is 25%, 50% and 75% completed. Pay the affected DBE's within 7 days of receipt of payment from the Commission.
  - (b) Whenever work is performed equal to 10% of the total contract price, excluding the bid price for this item, the amount bid for mobilization less any payments made under Section 608.4(a), or 3% of the total contract price, excluding the bid price for this item, whichever is less, will be paid.
  - (c) Whenever work is performed equal to 25% of the total contract price, excluding the bid price for this item, any remaining amount bid for mobilization less any payment made under Section 608.4(a), or an additional 2% of the total contract price, excluding the bid price for this item, whichever is less, will be paid.
  - (d) If the total contract lump sum price for mobilization has been paid prior to any payments made as specified in Section 608.4(a), pay 25% of the amount shown on Attachment A for mobilization to the affected DBE's not later than 10 days prior to the scheduled start of the subcontracted DBE work. Pay the remaining 75% as specified in Section 608.4(a).
  - (e) Upon completion of the project, any remaining amount bid for mobilization will be paid.
- Eight percent (8%) of the bid price for all bid items, except for items 0608-0001 and 9900-0410, will be paid upon the Engineering Design submission, approval of the Design submission set by the Commission, and field review and approval of the information on the plan sets. Design plan set submission shall include the following, at a minimum:

1. Complete Foundation Design (Soil borings are not required for this project.)

2. Complete Structures Design - RWIS Support Tower and communication pole.
  3. Site Plan (ID Point of Service, Conduit, Junction Boxes, Equipment Location, Guide rail)
  4. Structures Plan - Foundations (RWIS Plans and Elevations)
  5. Guide rail design
  6. MPT Plans
  7. Sediment Control Plans
  8. Block Wiring Diagrams
  9. Draft SAT and OAT Plans, including testing and traceability matrix.
  10. Catalog Cut Sheets for all RWIS components. The PROPOSER may submit cut sheets for these items separate from the Design submission. If the cut sheets are approved by the Commission, the PROPOSER may begin to procure such items.
  11. All plans shall be submitted in both hard copy and in electronic format (PDF and MicroStation).
- Fifty percent (50%) of the bid price for all bid items, except for items 0608-0001 and 9900-0410, will be paid upon the delivery of all equipment for each item to the project storage site (one central location) and proper certification of the successful completion of the factory acceptance tests, not exceeding the invoice price of the product.
  - Twenty percent (20%) of the bid price for all bid items, except for items 0608-0001 and 9900-0410, will be paid upon the successful installation and completion of the System Acceptance Test (SAT) as specified. The SAT testing procedures must be approved by the Commission prior to the commencing of SAT testing.
  - Ten percent (10%) of the bid price for all bid items, except for items 0608-0001 and 9900-0410, will be paid upon the successful completion of the Operational Acceptance Test (OAT) as specified. SAT testing on all project equipment must be completed prior to the commencement of OAT testing. The OAT testing procedures must be approved by the Commission prior to the commencing of OAT testing.
  - Twelve percent (12%) of the bid price for all bid items, except for items 0608-0001 and 9900-0410, will be paid upon the Final Approval of all system documentation, which include:
    1. Complete As-Built Plans including all Details
    2. Submission of final training plan
    3. Final training
    4. Final System Operations and Maintenance Manuals (System Maintenance, System Administrator and Operator guides.)
    5. Submission of all System/Subsystem Warranties

6. Submission of all Equipment Manuals
  7. Submission of all Shop Drawings (Wiring Diagrams, Installation Drawings and Detail Drawings)
  8. Submission of all Control Cabinet, and Service Panel Drawings
  9. Complete NTCIP Compliance testing results and certifications
  10. Software installation diskettes or CD-ROM's
- Fifty percent (50%) of item 9900-0410, System Support Equipment, will be paid upon the delivery of all equipment to the project storage site (one central location) and proper certification of the successful completion of the factory acceptance tests, not exceeding the invoice price of the product. Upon approval of the 30-Day Operational Test, the remaining amount of the item will be paid to the PROPOSER.
  - The Commissions wireless service provider cost that includes the wireless equipment (hardware and software), labor, wireless service provider supplied materials and integration provided by wireless service provider **WILL NOT BE** included in the PROPOSERS bid. This amount, for each site, will be paid directly to the wireless service provider by the Commission.

### **CONTRACTOR'S INSURANCE**

A. General. Do not commence work under the contract until all insurance, and insurers, under this section have been obtained and approved by the Commission. Before or at the execution of a Contract, provide the Commission with certificates of insurance evidencing the coverage required. Have all primary and excess liability policies contain the following clause: "Thirty (30) days written notice of any cancellation, non-renewal, limit or coverage reduction is to be sent to the Commission by Certified Mail." The preceding is subject to existing Commonwealth of Pennsylvania statutory cancellation provisions relating to non-payment of premium and misrepresentation by the insured. Maintain the insurance described herein until the work is completed and a Final Certificate of Completion has been issued. All insurance policies must be written by an Insurance Company licensed and authorized to do business in Pennsylvania and acceptable to the Commission. Have all insurance policies and certificates signed by a resident Pennsylvania Agent of the issuing Company. However, in the case of an eligible surplus lines insurer, have all policies and certificates also signed by a party duly authorized to bind, on behalf of the eligible surplus lines insurer, the certified coverage's.

B. Worker's Compensation and Employer's Liability Insurance. Take out, pay for and maintain during the life of the contract, Worker's Compensation Insurance in statutory required limits for the protection of all employees. Provide, pay for and maintain during the life of the contract, Employer's Liability Insurance in limits of not less than \$500,000 bodily injury each accident, \$500,000 bodily injury by disease, and \$500,000 bodily injury by disease each employee.

C. Commercial General Liability Insurance. Includes: Products/Completed Operations; Blanket Contractual Liability - All Written & Oral Contracts; premises and operations



- \$2,000,000 Each Occurrence
- \$2,000,000 Advertising and Personal Injury Limit
- \$2,000,000 General Aggregate per Location/Per Site
- \$2,000,000 Products and Completed Operations Aggregate
- \$50,000 Fire Damage Legal, Any One Fire
- \$5,000 Medical Payments

D. Commercial Automobile Liability Insurance - covering all owned hired, leased and non-owned vehicles with a minimum limit of liability of \$1,000,000 per occurrence.

E. Commercial Umbrella/Excess Insurance - with the following minimum limits:  
10/02/08 CS-107-15

- \$5,000,000 per Occurrence
- \$5,000,000 General Aggregate
- \$5,000,000 Products/Completed Operations Aggregate

F. The Commercial General Liability and Automobile Liability policies will name the Pennsylvania Turnpike Commission, the Commonwealth of Pennsylvania, Pennsylvania Department of Transportation, Michael Baker, Jr., Inc., the Design Engineer and the Construction Manager, if any, as an Additional Insured.

G. Special Hazards. Requirements concerning Railroad Protective Insurance, Modification of Blasting Insurance Requirements and Insurance for other special hazards will, if required, be included in the Special Provisions.

H. Proof of Insurance. Before commencing work, furnish to the Commission three original certificates of insurance outlining the coverage is detailed above. The certificate will also indicate the Additional Insured status of the Commission and the appropriate cancellation/non-renewal notice wording.

The insurance company certificates will be in standard ACORD form and will contain the address and phone number of the insurance company or insurance agent. If appropriate, the Commission reserves the right to request certified copies of the contractor's insurance coverage.

I. Payment. Incidental to the project.

## **WARRANTIES AND GUARANTEES**

Description - Guarantee the equipment services, software and hardware provided under this Contract until final system acceptance (i.e., satisfactory completion of 30-Day operational test). Submit all equipment and material guarantees or warranties supplied by equipment manufacturer or supplier to the Commission in writing.

#### Software License, Warranty, Support, and Upgrades

##### A. The Commission's Rights

The PROPOSER and its subcontractors grant the Commission intellectual property rights to unlimited copies of any software/firmware, if any, acquired or created for use at any site or facility operated by the Commission. The Commission shall have the right to duplicate any Documentation associated with the software/firmware for use of its employees or agents. If the RWIS system makes use of software packages purchased from a Third Party, the PROPOSER will provide the Commission enough licensed copies of that standard software package to properly implement the systems for this project. The PROPOSER will coordinate with the Commission on the final number of software licenses required.

##### B. Warranty

Fully guarantee all Software/Firmware, and items, or materials created by, or manufactured by the PROPOSER, and provided under this Contract, to be FREE FROM DEFECTS (insofar as known) at the time of acceptance. For third-party suppliers, furnish the Commission those warranties offered as normal trade practice by those suppliers.

For one (1) year after approval of the operational testing and final acceptance, the PROPOSER will provide promptly, within one (1) month after made available by the manufacturer, any amendments or alterations to the software/firmware that may be required to correct errors present at the time of acceptance, which affect performance, in accordance with these Specifications. Any alterations will be performed with a system configuration management process, which will first be approved by the Commission.

##### C. Upgrades

For one (1) year after acceptance, the PROPOSER will notify the Commission of upgrades, enhancements, or special features developed for these systems. The PROPOSER will provide upgrades and enhancements to the software that will improve the operating performance of the systems, but do not change the basic functions of the systems. These upgrades and enhancements shall be provided to the Commission at no charge. After this term, it will be the sole responsibility of the Commission for requesting available upgrades, enhancements, or special features developed for these systems.

#### D. Level of Service

The LOS of the Warranty is equivalent to FHWA/McTrans LOS 1, "Full Technical and Maintenance Support". Provide the following:

Immediate (same-day) notification via email and telephone of any serious "defect/bug" discovered in a supported, maintained program.

Free replacements of programs, program modules, firmware, and documentation, which are updated to correct "defects/bugs". This is the implementation of the Warranty.

Full telephone, email and FAX, question and answer user support during normal business hours.

Send two (2) copies of each replacement /enhancement /upgrade /version /documentation via overnight express carrier delivery. The PROPOSER has the right to market or sell the software/firmware developed for the Commission to other vendors, agencies, or highway departments. In return, during the period of Warranty, the PROPOSER shall provide the Commission free of cost, those new versions of the software/firmware that may be developed as enhancements or modifications to meet the requirements of other highway departments

### **PROPOSER RESPONSIBILITY**

General - It is the sole responsibility of the PROPOSER to provide the Commission with the design, procurement, installation and integration of fully functional RWIS systems, to the approval of the Commission. The PROPOSERS final bid price for this contract, will not be altered unless additional work is mutually agreed upon between both the Commission and the PROPOSER.

A. The PROPOSER shall maintain all equipment procured under this Contract in proper working and fully operational condition throughout the period of construction, system acceptance testing, and successful completion of the 30-Day operational test period, as determined by the Commission. Proper working and operational conditions means that all field equipment, all hardware, and software meets the contract specifications, the intent of the project, and the manufacturer's specifications functions. All field and Highspire facility equipment must be installed and all equipment must have successfully completed System Acceptance Testing (SAT) before the 30-day Operational Acceptance Test (OAT) period can commence. The Department will provide the PROPOSER with written or oral approval to begin OAT testing. The Commission is not responsible for any delays or penalties incurred by the PROPOSER due to incomplete testing, or failure to provide a satisfactory system, prior to the start of the OAT testing.

If the equipment is damaged or rendered inoperable due to external reasons including, but not limited to, vehicular accidents on the roadway, rainstorm, snowstorm, or other natural

disasters, restore to proper operating conditions within the applicable time frame as specified in Appendix E. If such damage occurs after the start of the 30-Day operational test and before the guaranty period, the PROPOSER will be reimbursed for the repair in accordance with the Commission's Publication 408, Section 110.03.

**B. Roadway Weather Information System (RWIS)**

Design, furnish and install all RWIS elements specified under this Contract. Coordinate with the RWIS vendor to provide a fully functional and operational RWIS system. Coordinate with the RWIS vendor and the Commission to provide power and communication links as specified. Furnish the necessary server and central control software to the Commission.

**C. Communications and Electrical Service Installation**

Notify the Commission 30 - 45 days prior to the installation of all communication services and electrical service. Service pole must be installed at the time of notice, and approved by the Commission.

Design, furnish and install a fully functional communications system based on either fiber optic, wireless or a hybrid of these two (2) technologies. All wireless communications will be coordinated through the Commission and will utilize the Commissions wireless service provider hardware to connect to existing WAN radio towers or before mentioned facilities. **Dial-up or leased line communications will not be considered as an acceptable means of communications to devices in this project.** Install a complete communications system (fiber optic, wireless or a hybrid of the two) to the aforementioned equipment. The PROPOSER can only utilize the Commissions wireless provider for their wireless solution on this project. No other wireless solution will be accepted by the Commission. The PROPOSER must contact Daniel Buckley (Telephone - 978-442-4452 – email [buckleyd@harris.com](mailto:buckleyd@harris.com)) to coordinate wireless services for this project. **The PROPOSER must complete all coordination with Commission's wireless service provider three (3) business days prior to the proposal due date.**

**ENVIRONMENTAL CLEARANCE**

General – An Environmental clearance from the regulatory agencies has already been received for the project. The PROPOSER is not required to obtain any environmental clearance for this project.

**INSPECTOR'S FIELD OFFICE**

General – An inspector's field office is NOT a requirement for this project; however, the PROPOSER may install a field office for the operations if the PROPOSER wishes to do so. If field office is established, no separate payment will be made for the item.

**SYSTEM SUPPORT EQUIPMENT**

General - This work is the furnishing of system support equipment for the RWIS system. Provide equipment identical to those used elsewhere in the project and as specified under this

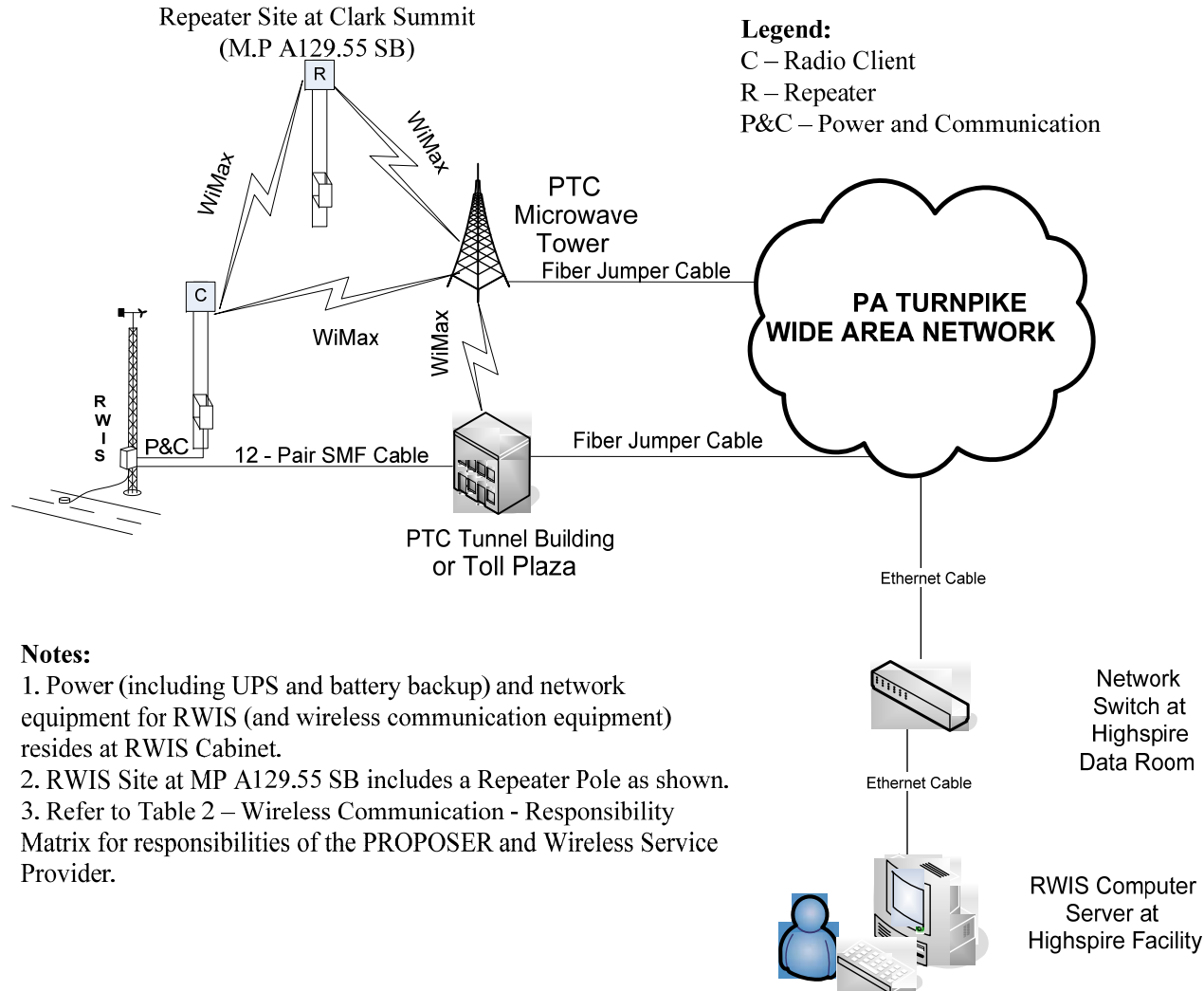
Contract. All replaced equipment must be fixed and returned to the Commission within 30-days of replacement. All spare equipment quantities must be provided to the Commission at the conclusion of the contract period.

Material - Furnish the following equipment and associated quantities for the RWIS, in accordance with Appendix B:

- A. One (1) RPU
- B. Sensors – two (2) unit of each type
  - Two (2) Pavement sensors
  - Two (2) Weather Identifier and Visibility sensors
  - Two (2) Air Temperature/Relative Humidity sensors
  - Two (2) Barometric Pressure sensors
  - Two (2) Wind Speed and Direction sensors
  - Two (2) video camera assembly including lens and housing
  - Two (2) Fiber Optic Modems, if applicable

As directed by the Engineer, deliver all equipment to the Commission's, Project Manager in Highspire, PA.

## CONCEPTUAL (OPTIONAL) RWIS SYSTEM DIAGRAM



## **APPENDIX B**

### **ROADWAY WEATHER INFORMATION SYSTEM – FUNCTIONAL REQUIREMENTS**

**APPENDIX B**  
**ROAD WEATHER INFORMATION SYSTEM (RWIS)**  
**– FUNCTIONAL REQUIREMENTS**

Description - This work includes the design, furnishing, and installation, of a complete and functioning Roadway Weather Information System (RWIS) for monitoring and displaying pavement surface conditions, subsurface and atmospheric temperatures and conditions. The system must be fully integrated and compatible with the Commissions existing RWIS system (manufactured by Vaisala (previously QTT, SSI)) and will include the individual sensors, and the Remote Processing Unit (RPU) at the field site. The existing RWIS system at the Highspire facility includes an existing server (with windows 2003) at RWIS control software (Scan Web version 5.7 from QTT. The RWIS field site includes a fixed focus, fixed position video camera assembly as described herein.

**It is the sole responsibility of the PROPOSER to design, procure, install and to integrate a fully functional RWIS system at the locations denoted in this contract, to the approval of the Commission. No additional payments will be made to the PROPOSER for the RWIS system, unless it is additional work items mutually agreed upon by both the PROPOSER and the Commission.**

The Roadway Weather Information System (RWIS) is a component of the Intelligent Transportation System (ITS) which helps to identify pavement locations in which snow or ice conditions are present, or forecasted to occur in the near future. These specifications detail the system to be installed for the Pennsylvania Turnpike Commission (PTC) at selected sites along the Turnpike.

- A. Manufacturer/Vendor Qualifications: A list of manufacturers / vendors of RWIS equipment acceptable to the PTC is provided below. . All RWIS equipment provided by these, or other, manufacturers / vendors must satisfy the requirements indicated in these specifications. In addition, all manufacturers/ vendors of RWIS equipment must show that they have been provided the type of equipment proposed for use on this project for at least five years. The manufacturer / vendor must also provide at least two references from individuals at public agencies (include contact person and phone number) who will be able to document that similar RWIS equipment provided by the manufacture / vendor has been in successful operation for at least three years.

- Vaisala  
1288 Reamwood Ave.  
Sunnyvale, CA 94089-2233  
Telephone: (408)-734 9640
- Boschung Company Inc.  
P.O. Box 1160  
Brained, MN 56401



Telephone: (218)-828-2012

- Climatronics Corporation  
140 Wilbur Place  
Bohemia, NY 11716-2404  
Telephone: 631-567-7300

Material – The operation of the system shall have the functions and characteristics, as specified below. Each system should provide site-specific comprehensive data essential for intelligent highway management and efficient and effective maintenance scheduling. Each location shall have on-site weather sensors that continuously collect and store weather condition and information and video. Furnish all materials in accordance with the following requirements:

A. Non-Invasive Pavement Sensors

Surface Sensor Requirement: The system shall be specifically designed for monitoring and displaying pavement surface conditions (roadway surface status conditions including dry, moist, wet, slush, frost, snow and ice.), surface friction, pavement temperature and include the following functions:

- Shall accurately determine the following surface conditions: dry, moist, wet, slush, frost, snow, and ice.
- Shall independently measure and report the amount (thickness) of water, frost/snow, and ice, in any mixture of these, on the road surface.
- Shall measure and report the water equivalent of snow up to 0.78 inches.
- Shall report a grip value corresponding to changes of friction caused by water, ice and a combination of them.
- Shall detect the onset of slippery conditions and shall detect ice layers as thin 10 µm.
- Shall provide a surface temperature resolution of 0.2 °F in the range -40°F to 140°F with accuracy of 0.5 °F in typical freezing conditions.
- Shall provide good quality color video images of the roadway with a resolution of 640 pixels by 480 pixels.

- The sensors shall accurately determine condition, friction, and temperature of the surface when located at a distance of between 6ft and 50ft from the target area of the road.
- The sensors shall accurately determine condition, friction, and temperature of the surface of the target area of the road when installed at an angle of between 30deg and 85deg from the horizontal.
- Shall automatically measure lens contamination and warn when cleaning is necessary
- The camera shall be a fixed position, network camera with a light sensitivity of 0.75 to 500,000 lux and shall be capable of a horizontal viewing angle between 27° and 67°.
- Shall have sensors of a weatherproof design and provide stable operation over a temperature range of -40°F to 140°F and 0-100% RH, non-condensing.
- Shall have electronics, other than the sensors themselves, enclosed inside a NEMA 4 non-corrosive metal enclosure that is resistant to damage by weather.
- Shall operate with power provided in a range of 100-130 VAC at 50-60 Hz.

B. Atmospheric Sensors Requirements: Furnish and install one of each type of the following sensors on the instrument structure at each RWIS site:

Weather Identifier and Visibility Sensor: The sensor shall determine the type of precipitation that is occurring, measure precipitation rate, and determine visibility.

The sensor shall differentiate among drizzle, rain, and snow, and measure actual precipitation rates as water equivalent between 0.02 to 200 in/hr. The precipitation rate measurement shall have error less than 10% for the full expected range of 0.1 to 20.0 inches per hour, with less than a 5% error within the normal range of 0.4 to 4.0 inches per hour.

The sensor shall determine the visibility at the site over a range of .005 to 1 mile with an error rate of less than 20%.

The sensor shall have housing built to function in all weather conditions, and include heated optics to prevent ice, dew, or frost buildup that would preclude visibility measurements.

The sensor shall have a normal operating temperature range between –50 degrees C and 50 degrees C, and storage temperature range between –70 degrees C and 80 degrees C.

The sensor shall operate on 115 VAC, 48-68 Hz AC at 35 watts maximum power.

The sensor shall communicate over RS-232 channel.

Air Temperature and Relative Humidity Sensor: The sensor unit shall measure both Air Temperature and Relative Humidity.

The sensor shall have a measuring range of 10 to 100% relative humidity.

The sensor shall have an accuracy of +/- 5% relative humidity at 70 degrees F.

The sensor shall have an air temperature sensing element, which operates over the temperature range of –30 degrees C to 50 degrees C with a survival operating range of –37 degrees C to 80 degrees C.

The sensor shall have an accuracy of +/- 0.5 degrees F over the operating temperature range.

The sensor shall calculate system dew point temperature from the air temperature and relative humidity with an error rate, of less than 5%.

The sensor enclosed in a solar radiation and wind shield that allows for the free movement of air to the sensor but prevents direct exposure of the sensor to sun and wind.

Barometric Pressure Sensor: The sensor shall identify the atmospheric barometric pressure.

The sensor shall be enclosed in a weatherproof enclosure. The enclosure shall house a solid-state pressure transducer, with linearization and amplification electronics.

The sensor shall be mounted on the outdoor RWIS structure.

The sensor shall have inlet holes to allow the atmospheric pressure access to the sensing element.

The sensor shall have an operating range between 26 and 32 in. Hg, suitable for elevations sea level to 1500 ft.

The sensor shall be operable within -40 degrees C and 65 degrees C with a temperature compensated range between -18 degrees C and 65 degrees C.

The sensor shall be accurate within +/- 0.34 millibars at 20 Degrees C, with maximum error not to exceed +/- 1.35 millibars.

The sensor shall consume power of less than 11 mA at 12 VDC, Typical.

Wind Speed and Direction Sensor: The sensor shall provide a mechanical wind speed/direction sensor having an operating range of 0 to 134 miles per hour.

The sensor shall have survival operation limit of 180 miles per hour with an operating azimuth of 360 degrees mechanical and 355 degrees electrical.

The sensor shall have a temperature operating range of -40 degrees C to 60 degrees C with a survival operating range to 85 degrees C. Its error rate must be less than 5%.

C. Remote Processing Unit: The remote processing unit (RPU) shall gather data from all weather sensors at the RWIS site, and transmit the collected data to the central processing unit (CPU) at the Turnpike's TOC. The RPU shall operate on a Pentium grade processor with linux operating system for multitasking.

1. Characteristics: Provide RPU meeting or exceeding the following requirements:

Provide software capable of calculating the 24-hour precipitation accumulation and storing this data for subsequent transmission to the central processing unit.

Operate in a range of 120 VAC at 50 to 60 Hz without using more than approximately 50 watts of continuous power.

Incorporate "watchdog" circuitry that monitors its own operation and resets itself, if the RPU software enters an indeterminate state.

Provide the capability to reset by a "user administrator" from the central processing unit.

Be capable of remote alignment, reconfiguration and accepting downloads of update software from the central processing unit over the same communication link used to collect data from the remote processing unit.

Provide a remote processing unit having digital outputs to control on/off type functions when there is a significant change of its sensor data, including: onset of precipitation, cessation of precipitation, occurrence of snow, ice, or frost on the pavement.

All circuitry of the remote processing unit, the voltage inputs, and all communications ports must be designed and tested to provide transient and surge protection.

Provide stable operation over a temperature range of –40 degrees C to 70 degrees C and 0% to 90% relative humidity non-condensing.

2. Enclosure: Enclose the RPU in a NEMA 4 lockable aluminum enclosure sized to accommodate the RPU, CODEC, and communications equipment. Fit all RPU cabinets with locks using a "Best" 7 pin interchangeable core and keyed alike.
3. RPU/CPU Data Communications: Provide ten serial interfaces (two systems dedicated and 8 for device interfaces.) and an on-board Ethernet port 10/100 Mbps. Provide RPU/CPU communications via one CCITT V.24/EIA-232 communication interface port on the remote processing unit using TCP/IP. Provide standard equipment and software with TCP/IP (Transmission Control Protocol/Internet Protocol), PPP (Point to Point Protocol), and SNMP (Simple Network Management Protocol) to assure the RWIS and the vendor have the capability to implement complex protocols and to support NTCIP-ESS data communication standards. All RWIS and associated control equipment shall comply with the latest approved versions of the National Transportation Communication for ITS Protocol (NTCIP) Standards during installation as detailed in the following NEMA Standard Publications.
  - NTCIP 1102:2004 (v01.15, October 2005) – Octet Encoding Rules (OER) Base Protocol
  - NTCIP 1103 v01.26 (Approved, November 2005) – NTCIP Transportation Management Protocol (TMP) Base Protocol
  - NTCIP 1201:1996 and Amendment 1 – Global Objects (GO) Definitions
  - NTCIP 2101:2001 (v01.19, November 26, 2001) – Point-to-MultiPoint Protocol (PMPP) using RS-232 Subnetwork Profile
  - NTCIP 2104:2003 (v01.11, September 2005) – Ethernet Subnetwork Profile
  - NTCIP 2201:2003 (v01.15, September 2005) – Transportation Transport Profile
  - NTCIP 2202:2001 (v01.05, December 2001) – Internet (TCP/IP and UDP/IP) Transport Profile
  - NTCIP 2301:2001 (v01.08, December 2001) – AP-STMf (Simple Transportation Management Framework) – Conformance Level 1

- NTCIP 8004 v01.37a (Approved) – Structure and Identification of Management Information (SMI) Base Protocol

Provide two data transfer options to move data from the remote processing unit to the central processing unit.

1. The central processing unit may poll the remote processing unit at a time interval that can be changed by a PTC Duty Officer at a workstation linked to the CPU.
2. The remote processing unit shall independently auto-report its data to the central processing unit every time there is a change in its sensor data, including: onset of precipitation, cessation of precipitation, occurrence of snow, ice, or frost on the pavement.

D. Video Camera Assembly: Provide an outdoor rated video IP camera (or IP through an Encoder in the control cabinet) assembly that will supply color video imagery from the RWIS site. Provide an assembly consisting of a camera, lens, camera housing, at the RWIS site.

Furnish all hardware specified herein, tools, equipment, cables, materials, supplies, manufactured articles, and perform all operations and integration as specified herein.

1. Camera: Provide cameras, which are UL and CSA-compliant NTSC, format, solid state, charge-coupled device (CCD), self-contained, weather-resistant, designed for unattended operation, and meeting or exceeding the following requirements:

Image Sensor: 1/3" progressive scan RGB CMOS 1.3 Megapixel.

Minimum illumination/light sensitivity: 1 lux, F 1.0.

Video Compression: MPEG-4, Motion JPEG.

Provide video motion detection

Resolution: at least 160 x 90 up to a maximum of 1280 x 1024.

Frame Rate (MPEG-4): up to 8 fps at 1280 x 1024 resolution, 20 fps at 800 x 600

Frame Rate (Motion JPEG): up to 12 fps at 1280 x 1024 resolution, 30 fps at 800 x 600

Video streaming: simultaneous MPEG-4 and Motion JPEG controllable frame rate and bandwidth VDR/CBR MPEG-4.

Input Voltage: 7 – 20 V DC max. 5 W. Power over Ethernet IEEE 802.3af Class 2

Operating Temperature: minimum operating temperature range 0 degrees C to 45 degrees C.

Relative Humidity: 20 – 80% RH (non-condensing.)

Connectors: RJ-45 Ethernet 10 BaseT/100BaseTX PoE

2. Lens: Provide a lens for each camera, which meets or exceeds the following requirements:

Focal length range of 3-8 mm.

The lens shall have DC iris.

The lens shall have an angle of view between 37 degrees and 93 degrees.

The lens shall have CS mount

3. Camera Housing: Furnish an environmentally sealed, tamper proof, NEMA-4 rated housing for each camera assembly meeting the following requirements:

IP66-rated protection against dust and heavy rain.

Sized to enclose the specified camera/lens combination.

Capable of withstanding a total of 7 psi of nitrogen gas

Pressure release valve for releasing pressure

Polycarbonate, UV-stabilized, silicone coated window.

Include two (2) o-ring seals

Thermostatically controlled heater and blower with thermostat set as follows:

- Activation of the heater at an in-the-housing temperature of 4 degrees C.
- Activation of the blower at an in-the-housing temperature of 32 degrees C.

Defroster and defogger.

Desiccant packet inside the housing prior to sealing.

Thermal insulation.

One weatherproof cable entry boot.

Tamper resistant lock.

Front sun shield.

Ancillary cables and connectors: Furnish all cables and miscellaneous equipment to connect the video camera to the RPU unit.

E. Instrument Structure:

Design, procure, furnish, and install metal instrument structure and foundation for mounting the sensors and equipment. At the foot of the structure, provide a 3 foot by 4 foot concrete courtesy pad for technician use.

F. Protective Fence: To prevent vandalism, surround each Instrument structure by a chain-link security fence, with posts set in concrete, and a lockable entrance gate, as shown in the PennDOT Standard Drawing RC-60M sheet 2 of 3 and PTS 340. Provide a rustproof padlock with keys approved by the Commission. The size of the enclosure created by this fence should be approximately 15 feet by 15 feet.

G. Power Supply: Furnish and install a complete 120 VAC power supply system for the RWIS.

K. Design the communication system and submit to the Commission for approval prior to purchase and installation of equipment. The communication system may include fiber optic or wireless or a hybrid of both.

Construction: Perform construction as per the Standard Drawings, and as follows:

A. General:

Construct the Roadway Weather Information System in accordance with the specifications, with all requirements of the manufacturer, all applicable codes, regulations, and Standards. Provide manufacturer recommendations for location revisions to the Engineer for review and approval.

Furnish all necessary materials such as cables, modems, connectors, splicing kits, sensor embedding kits and other appurtenances as required by the manufacturer for a complete installation of the system.



Mount all atmospheric sensors at the remote processing unit location, above the ground level at the height as suggested by the manufacturer(s) and approved by the Engineer.

Mount video camera on the instrument structure.

Mount the in-pavement sensor flush with the roadway unaffected by traffic and snowplows at a location as approved by the Engineer. For easy identification, paint top of the sensor in a contrast color (orange) when compared with the roadway pavement surface. If painting the top is not possible, paint the pavement around the sensor for easy identification of sensor.

Mount the RPU enclosures on the instrument structure.

Install the hardware and software and connect to the sensors.

If required by the approved RWIS sensor(s), provide an antenna for wireless communications on the instrument structure. Configure the transmitter antenna and receiver antenna to minimize the potential of experiencing harmful interference from surrounding communications systems, and to ensure that the link does not represent a source of harmful interference to those systems. Vertically and horizontally align the antennas in accordance with the manufacturer's instructions and guidance to maintain, an unobstructed, visual line-of-sight. When properly aligned, tightly secure the antennas to poles to prevent movement. Movement of the antennas after initial configuration requires the PROPOSER to repeat the alignment process and may require the PROPOSER to file new registration forms. Make every effort to avoid this situation. Make all necessary connections to link to the Commissions microwave system termination panel in the utility building adjacent to the tower.

Obtain the services of a site engineer/technical advisor from the manufacturer to assist in the construction, set up, turn on and testing of the complete installation. Demonstrate communication between the remote processing unit, and the central processing unit. The manufacturer shall be present during all installation activities and testing.

B. Utilities:

Contact the affected utility companies to provide service to service poles. Provide all electric service and telephone service underground from the service pole in accordance with these Special Provisions.

Install the primary power and fuse at 15 amps with voltage protection.

C. Conduit:

Install foundation and conduits, as required. Provide a conduit containing all necessary sensor cables, video transmission cables. Provide conduit for power cables. Provide conduit for communication cables, if required and as approved by the PTC.

Install cables through the pole and/or conduit, as designed, as specified by the manufacturer and approved by the Engineer. Coordinate the installation of cables for power and communications with the Engineer.

D. Clearing:

At each RWIS site, perform necessary tree trimming and clearing to provide for the free movement of air and an unobstructed view of the roadway. Coordinate clearing activities with the Engineer. Payment for clearing will be incidental to the RWIS item.

E. Instrument structure:

Install an Instrument structure at locations as per the approved design. Install all atmospheric sensors described above on this pole. Locate the structure and fencing outside the clear zone as approved. The final location must be verified and approved by the Commission. In addition, install poles required for mounting wireless equipment at wireless RWIS sites and repeater location as indicated in Appendix I. Refer to Appendix I for pole requirements.

F. Central Software

Install or use the most recent RWIS central software on the server at the Highspire facility that will be utilized to access data from both the existing and proposed RWIS location.

G. Work Standards and Acceptance Testing:

Perform calibration and acceptance by running tests and following the procedure outlined by the manufacturer, and as indicated in Appendix A, and approved by the Commission. Supply actual field test documentation, which substantiates sensor performance.

H. Warranty:

Provide Warranties and Guarantees as indicated in Appendix A.

I. Training:

Provide RWIS training as indicated in Appendix D.

J. Documentation:

Furnish documentation for the RWIS as described in Appendix A.

**ROADWAY WEATHER INFORMATION SYSTEM SOFTWARE**

Description - The work to be performed under this section consists of verifying the central software on the existing server, that provides the same functionalities as the existing software as well as to include a secured web-based access (utilizing a username and password for access), and has the capability of interfacing with the existing and proposed RWIS RPU's in the field, proving the ability to communicate with the field units, polling data from the RPU's, and provide summary statistics based on the data from the RPU's.

Materials - Upgrade existing software to the latest vender version. Provide documentation of the upgrade.

Documentation and Training are described elsewhere in these Special Provisions.

Construction - Update the existing database by assigning an appropriate computer address to each RWIS RPU. Perform RWIS RPU Setup from the RWIS CPU.

Demonstrate the ability to operate the proposed RWIS in two modes from the RWIS CPU. In the first mode the CPU, and any workstation linked to the CPU, will continually retrieve real-time weather data from the RPU's. In the second mode, the CPU will retrieve data from a selected RPU within 5 seconds of a request made from the RWIS CPU or any workstation linked to this CPU.

Demonstrate the ability to operate in these two modes from the Laptop PC (to be provided by the Commission) tied into the system through a phone line.

Generate printed reports and use the Weather Prediction program to generate printed predictions.

**UNINTERRUPTED POWER SUPPLY (UPS) AND UPS BATTERIES  
FUNCTIONAL REQUIREMENTS**

**GENERAL** - The PROPOSER shall furnish and install Uninterrupted Power Supply (UPS) and provide 12-Volt UPS batteries in all the RWIS cabinets and Repeater pole cabinet at Clark Summit as described herein. Furnish and install a UPS that is a true uninterruptible power system with power conditioner, filtering, lighting attenuation, and external battery, designed for transportation and traffic applications. The UPS must be capable of operating at its maximum rated output in extreme and harsh environments with all equipment. All input/output connections as well as visual and programming

features must be front panel mounted. There must be no exposed conductors or connections between these devices to maximize safety. The PROPOSER shall design, furnish, and install the required quantities of the UPS and batteries in each RWIS cabinet. The design shall include the current load from all the RWIS cabinet equipment and wireless communication equipment as applicable. The Proposer shall coordinate with Commission's wireless service provider to obtain the current load for the wireless communication equipment.

The UPS provided must include the following functions:

- A. Provide a minimum of eight (8) hours of UPS and battery backup at each of the RWIS sites and Repeater pole location at Clark Summit.
- B. Output voltage of 120VAC.
- C. Output Power (VA) – 2000
- D. Active Output Power (Watts) – 1500.
- E. Programmable threshold voltages
- F. Include a low harmonic AC sine wave output.
- G. Maximum input current – to be determined by the PROPOSER
- H. Typical line efficiency – 95% - 97%
- I. Operating Temperature - -37°C to +74°C
- J. Data dump commands available through RS232 port, USB port, or SNMP, TCP/IP, LAN communications card.
- K. External connections must be front panel accessible.
- L. UL/CSA listed

The UPS batteries provided must include the following functions:

- 1. Nominal Voltage - 12-Volt
- 2. Float Charge Voltage – 13.5 at 77°F Absorbed valve-regulated, lead acid battery.
- 3. Equalized Charge Voltage – 13.8 V
- 4. Operating Temperature - 10°C to 35°C.
- 5. Batteries are housed in polypropylene or flame retardant polypropylene housing.
- 6. Terminals – Lead terminals with ¼ x 20 brass inserts.
- 7. Discharge ratings in watts per cell: 104 watts

The cut sheets for the UPS and battery system currently used by the Commission at other RWIS locations are provided in this RFP.

## **APPENDIX C**

### **PENNDOT PUBLICATION 408 SPECIFICATIONS**

## APPENDIX C PENNDOT PUBLICATION 408 SPECIFICATIONS

### A. GENERAL

1. The PROPOSER is expected to utilize the following PennDOT standard specifications within their design, when Commission standards are not prevalent. The list is provided for informational purposes and is not intended to be a complete list of potential standard items. All specific standard PennDOT items and quantities must be provided by the PROPOSER at the time of their Engineering Design submission. All standard items utilized by the PROPOSER shall follow Publication 408/2007 standards, latest version.
2. The PROPOSER is expected to utilize the following anticipated Special and Modified items within their design, as proposed for this project. The list is provided for informational purposes and is not intended to be a complete list of potential special items. All special items and quantities must be provided by the PROPOSER at the time of their Engineering Design submission.

Specification Section	Item Description
0201	CLEARING AND GRUBBING
0204	CLASS 3 EXCAVATION
0608	MOBILIZATION
0804	SEEDING AND SOIL SUPPLEMENTS - FORMULA D MODIFIED
0804	SEEDING AND SOIL SUPPLEMENTS - FORMULA L MODIFIED
0805	MULCHING - STRAW
0810	SELECTIVE TREE TRIMMING
0845	EROSION AND SEDIMENTATION CONTROL DURING CONSTRUCTION
0901	MAINTENANCE & PROTECTION OF TRAFFIC DURING CONSTRUCTION
0901	ARROW PANELS
4910	JUNCTION BOXES, PennDOT J.B.-2, MODIFIED
4910	2/0 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR, THWN/THHN INSULATED
4910	1/0 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR, THWN/THHN INSULATED
4910	AWG 2 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR, THWN/THHN INSULATED
4910	AWG 4 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR, THWN/THHN INSULATED
0910	2" DIRECT BURIAL SCHEDULE 40 PVC CONDUIT
0910	3" DIRECT BURIAL SCHEDULE 40 PVC CONDUIT
0910	2" EXPOSED GRS CONDUIT
4954	2" CONDUIT, MODIFIED
0954	TRENCH AND BACKFILL
0954	JUNCTION BOX, JB-27
1001	CLASS A CEMENT CONCRETE
1002	REINFORCEMENT BARS
SPECIAL	ELECTRIC UTILITY SERVICES
SPECIAL	TELEPHONE SERVICES
SPECIAL	35' WOODEN UTILITY POLE ASSEMBLY
SPECIAL	TESTING
SPECIAL	TRAINING
SPECIAL	3/4" EMT

Specification Section	Item Description
SPECIAL	2" EMT
SPECIAL	GUY WIRE ASSEMBLY
SPECIAL	TRANSFORMER ASSEMBLY
937	FLEXIBLE DELINEATOR - RED
937	FLEXIBLE DELINEATOR - ORANGE

## **APPENDIX D**

### **SYSTEM AND EQUIPMENT TESTING, AND TRAINING**



## **APPENDIX D**

### **SYSTEM AND EQUIPMENT TESTING, AND TRAINING**

#### **A. GENERAL TESTING PROCEDURE**

1. The Engineer shall have the right to witness and/or assign a representative to witness any test required in the Contract Documents.
2. All tests shall be conducted in accordance with approved test procedures. Testing is to be conducted by a qualified representative of the manufacturer of the element to be tested. Pertinent quantitative and qualitative test results shall be recorded on data summary sheets. All test records shall be submitted to Commission immediately following the test.
3. The PROPOSER shall complete testing for each element, subsystem within 2 calendar weeks.
4. The PROPOSER shall provide all testing equipment necessary to perform and complete the testing described in the Contract Documents.
5. All test procedures shall document what equipment function is being tested, the exact testing procedures, and outcome. All tests will be pass or fail. At the end of each testing section, an area for PROPOSER signature, Commission signature and date will be required. Also, at the end of each testing section, an Ad-hoc area (1 page) will be required for Commission and its consultant to document any other tests performed.

#### **B. EQUIPMENT TESTS**

1. The PROPOSER shall perform all tests required by the Contract Documents to ensure that the equipment and assemblies intended to be furnished and installed, meet or exceed the requirements of the Contract Documents and are ready to be integrated into the overall existing ITS System at the Commission's Highspire facility.
2. The PROPOSER shall conduct the following tests, on each subsystem that will be furnished and installed under this Contract: Engineering Design Approval/Field View; System Acceptance Test (SAT); 30-Day Operational Test. Costs for re-testing any parts within project testing, shall be the responsibility of the PROPOSER. Any testing that occurs outside the Commonwealth of Pennsylvania will have the costs include all transportation, lodging and meals for one (1) Commission employee and one (1) Commission representative paid for by the PROPOSER.
  - a. Engineering Design Approval: The PROPOSER will submit to the Commission their Engineering Design package for review and approval. The Commission will review the package and provide comments. Upon resolution of all Commission comments, the PROPOSER along with Commission representatives shall conduct

- b. In lieu of Factory Acceptance Testing (FAT), submit manufacturer's factory test certifications for all device equipment prior to installation.
  - c. System Acceptance Testing (SAT): After the equipment has been installed at the designated locations, the PROPOSER shall perform system acceptance testing. This testing shall verify that equipment has been installed properly and is fully functional in the field, as well as in the Highspire facility. It will be the responsibility of the PROPOSER, during SAT testing, to demonstrate through testing procedures that each piece of field equipment is fully functional in the field as a stand alone unit, as well as a piece of equipment that is part of the entire system and can be operated from the Highspire facility. The PROPOSER shall require the approval by the Commission of the SAT testing procedures a minimum of 30-days before the start of SAT testing. The PROPOSER shall utilize a traceability matrix format to the testing procedures to demonstrate compliance to the specifications.
  - d. Fiber Optic Cable Tests: If applicable, concurrently to the SAT, all fiber optic cable in this contract will be tested. For this testing, all fiber optic cable shall be fully operational for Commission personnel to operate.
  - e. Wireless Communication Tests: If applicable, concurrent to the SAT, all wimax communication equipment will be tested in the field. For this testing, all the communication equipment shall be fully operational for Commission personnel to operate.
  - f. Operational Acceptance Testing (OAT): Upon installation of all field equipment of this contract, Operational Acceptance Testing (OAT) will begin. For this testing, the entire system shall be fully operational for Commission personnel to operate.
3. Testing shall be conducted at key points in time, at the developmental, or production stage in order to find and eliminate problems associated with the design and operation of the equipment. The completion of each test shall not relieve the PROPOSER from any re-testing that may be necessary to eliminate subsequent test failures. Re-testing of any test is to be conducted to the level necessary to isolate the problem and establish a course of action to resolve the failure. The PROPOSER shall be responsible for all costs, expenses for one (1) Commission personnel and one (1) Commission representative for delays resulting from re-testing, correcting previous test failures, or re-testing.

#### C. DESIGN APPROVAL/FIELD VIEW

1. The PROPOSER shall provide five (5) half-size (11" x 17") and one (1) CD-ROM (files in PDF format) containing all plans and documentation required for field installation, as described in Appendix A. The Commission and its representatives will

2. Upon reviewing the Design plan set, the PROPOSER shall receive a copy (in MS Word Format) of all comments made during the Commission's review. The PROPOSER must submit written responses to all comments within 10 days.
3. During the field review, the PROPOSER, Commission and its representatives shall visit all RWIS communication equipment installation locations in the field. A review of the design and all design concerns will be addressed for each location.
4. The PROPOSER shall prepare test documentation, conduct testing, record results and repeat testing as required under the general testing requirements.

#### D. SYSTEM ACCEPTANCE TESTING (SAT)

1. System Acceptance Tests shall verify that all equipment has been installed properly in the field and is fully operational in a local mode (at the field site) as well as in the Highspire facility. It will be the responsibility of the PROPOSER, during SAT testing, to demonstrate through testing procedures that each piece of field equipment is fully functional in the field as a stand alone unit, as well as a piece of equipment that is part of the entire system and can be operated from the Highspire facility. SAT approval of all contract equipment is required before the start of Operation Acceptance Testing (OAT).
2. The PROPOSER shall provide all transportation and any other business related expenses for one (1) Commission personnel and one (1) Commission representative to attend the SAT. All travel arrangements will be made by the PROPOSER for these two (2) representatives.
3. PROPOSER shall prepare System Acceptance Test (SAT) documentation for approval before SAT begins. The SAT shall be conducted on all field devices, as well as on the central software at the Highspire facility. The PROPOSER will give the Commission a minimum of 5-days notice and a complete testing schedule to assure availability of Commission personnel, or their designee.
4. SAT tests shall be conducted, and approved by the Commission prior to the start of Operational Acceptance Testing.
5. During SAT testing, if there are more than 3 failures of any RWIS testing procedures, the testing will be stopped and the PROPOSER shall make any and all necessary repairs. All repairs will be documented. Once the repair are completed, and the systems are retested by the PROPOSER to verify proper functionality, the PROPOSER shall send a written letter to the Commission requesting the continuance of SAT testing,

6. After installation and agreement by the Commission to initiate testing, the System shall be tested in compliance with the System Acceptance Test Plan. The System Acceptance Test shall be conducted with all devices and components integrated as a System at the construction site with use of simulation expressly limited to perform stress and performance testing. The test scripts shall be used to validate the intended function and performance of all field devices and infrastructure components, e.g., local processors, network components, etc. System Acceptance Testing shall demonstrate that all equipment satisfies the specification requirements herein and design changes approved by Commission.
7. All repairs, construction, or modifications as required to comply with this Section shall be performed by the PROPOSER without additional cost to the Commission.
8. Submit to Commission a System Acceptance Test Report at the conclusion of the test at locations on Commission property for the purpose of verifying and validating the accuracy and integrity of the System as installed. The Commission will review the report and respond; indicating approval or noting changes required either in the performance of the Work or in the report. Make all changes or perform additional Work as the Commission may direct prior to the start of the Operational Test.

F. FIBER OPTIC CABLE TESTING (if applicable)

1. The PROPOSER shall submit a fiber optic testing plan for all fiber installed, to the Commission for review and approval prior to starting the test.
2. Prior to installing the fiber optic cable, the PROPOSER shall conduct the below tests to ensure that the cable is in good condition and meets the specifications. The PROPOSER shall provide report to the Engineer of these tests.
3. After installing a fiber optic cable between termination points, the PROPOSER shall immediately test the cable. The PROPOSER shall present the test results to the Engineer for approval within one week of the test. The PROPOSER shall test the entire length of each fiber in each cable using an Optical Time Domain Reflectometer (OTDR), testing for all the wavelengths that the fiber is designed to carry. The Commission or his representative will witness all OTDR tests. The PROPOSER shall give the Commission durable, labeled plots of the results for each fiber, and shall also provide these plots on electronic media. The plots shall have a record of all OTDR settings and the OTDR locations written on the trace. The PROPOSER shall also submit a listing of splices and the associated losses in tabular form, along with calculations demonstrating that the OTDR results for each fiber meet the attenuation

4. If special software is necessary to view the results of the OTDR tests on a personal computer, two licensed copies of the software associated with these test shall be provided to the Commission. The cost of this software will be considered incidental to the testing.
5. Also, perform an attenuation test with an optical power meter to demonstrate that the connectors at the ends of the run meet the attenuation specifications.
6. If the test results indicate that the cable, splices, or terminations do not meet the attenuation specifications, or if they indicate that the optical properties of the cable have been impaired during the installation, then the PROPOSER shall, at his expense, take such action as the Commission may approve to correct the problem. This may entail complete replacement of the fiber optic cable.
7. The PROPOSER shall, at a minimum, include the following documentation and tests in the fiber optic cable testing program:
  - (a) List of test equipment;
  - (b) Cable attenuation measurements in both directions at all wavelengths, including average link losses, for every fiber in every segment of every cable;
  - (c) Loss for each splice and connection;
  - (d) OTDR trace to each fiber with every event annotated as to what caused the event; and
  - (e) Calculations demonstrating that the OTDR results for each fiber meet the attenuation requirements of these specifications.
8. The PROPOSER shall conduct Bit Error Rate Tests (BERT) tests in conjunction with circuit loop back tests to help isolate equipment or line segments with degraded performance or certify circuits for tune up and operational use. Typically, the technician will activate a loop back on one end of the communications link and activate the BERT test on the other and conduct the test for a certain period of time.
9. The PROPOSER supplied BERT tester functions shall include the following capabilities:
  - (a) Input and output flow control, (Xon/Xoff and hardware)
  - (b) Test patterns include QBF, 63, 511, 2047, alternate mark/space, all printable characters, all 256 hex values.
  - (c) BERT tests can be timed or continuous.
  - (d) The polling tests can be sync or async.
  - (e) The BERT shall be capable of being the polling master or can be set to one of 16 remote addresses (slave). The unit shall be able to be polling only, or data blocks of various sizes can be sent at various rates. The unit shall be programmable control

- (f) Timing tests include RTS/CTS delay, character counting, echo time measurement, modem clock speed measurement, flow control response time, transition time from high to low or low to high state of control leads, high or low status of control leads.

10. The BERT tester shall be able to fully test the following application:

- (a) Polling tests
- (b) Bit error rate testing
- (c) Throughput testing
- (d) Testing multiplexers
- (e) Testing modems
- (f) Testing terminal, printer and personal computers
- (g) Testing terminal servers
- (h) Bench testing or field testing
- (i) RTS/CTS delay measurement
- (j) Sync operation to 64 Kbps
- (k) Async operation to 38.4 Kbps
- (l) Externally clocked async operation to 64 Kbps
- (m) Test patterns - QBF, QBF####, 63, 511, 2047, alt mark/space, printable characters, all 256 hex characters
- (n) RS-232C male DTE connector

11. The PROPOSER shall submit a BERT testing plan for all serial data circuits installed to the Commission for review and approval prior to starting the test. Each BERT test shall be conducted for a minimum of 10 minutes utilizing at least two different test patterns. All BERT testing shall be conducted in the presence of the Commission.

#### G. OPERATIONAL ACCEPTANCE TEST (OAT)

1. Upon notification from the Commission of approval of the System Acceptance Test Report including all of the subsystems and the PROPOSER's certification that the System is ready for operational testing, an Operational Test phase shall commence. The Operational Test shall be performed by the Commission operating staff with the advice and assistance of the PROPOSER operating the System during a thirty (30) consecutive day period.
2. The OAT will be conducted on all field devices, as well as on the central software at the Highspire facility. The PROPOSER will give the Commission a minimum of 5-days notice and a complete testing schedule to assure availability of Commission personnel, or their designee.
3. During this period, the Commission's operating staff will operate the System as specified in the Operational Acceptance Test Plan using the final version of all applicable manuals, printed guides and procedures. During the test, field elements must

4. If a subsystem has a Failure, as determined by the Commission or its representatives, then the Operational Test for that subsystem shall restart from day one. After the PROPOSER corrects a Failure for two (2) or more subsystems, the Operational Test for the entire System shall restart at day one, and shall continue until the results meet the conditions and terms of the performance period. During the Operational Test phase, the Commission, based upon information provided by the Commission operating staff, will determine the System's standard of performance as described herein and whether any failure shall be considered a Failure.
5. In the case where ten percent (10%) of similar equipment malfunctions during the test period, the Commission may declare a system defect and require replacement of similar equipment. When a system defect is declared, restart the 30-Day test for that specific system. The 30-day test period is to begin when all similar equipment is replaced and a system acceptance retest has been successfully completed. A total of 60 calendar days is provided for retests.

- a. Performance Period

The Performance Period for operational testing shall begin on the date of notification to the PROPOSER by the Commission to commence operational testing and shall end when the System has met the Standard of Performance for the consecutive days required by operating in conformity with the Contract at the required Availability Level stated in the Specifications.

- b. Exchange and Expansion Equipment During System and Operational Testing

Certify in writing to the Commission when exchange or expansion equipment, devices, or components are installed and ready for use. For the purpose of this Section, "expansion" is used to denote equipment, which is not specified in the approved final design Bill of Materials. Provide an Equipment or Component Installation Certificate, including date, for the equipment or component. If this occurs during the 30-day Operational Test, the performance period of thirty consecutive calendar days for the operational test shall recommence on the first Commission work day following acceptance of the PROPOSER's Equipment or Component Installation Certificate, at which time operational testing shall commence. It is not required that one thirty day period expire in order for another performance period to begin.

## H. TEST DOCUMENTATION

1. The PROPOSER shall provide test documentation, including at a minimum, test equipment, special test software, test procedures, checklist, test forms and data summary sheets. Test documentation shall:
  - a. Demonstrate that the System satisfies the intended project functionalities.
  - b. Demonstrate that the communications system satisfies the intended project functionalities.
  - c. Reference the requirements matrix to show that all requirements will be tested to demonstrate compliance with the Basic Design Criteria.

Test procedures, test forms and checklists shall be referenced to the Contract Document requirements, listing each requirement to be tested.

2. Test documentation shall be submitted for Engineer's approval, at least 30 days prior to the scheduled start of testing. Test documentation that does not receive the Commission's approval shall be reworked until approved. Testing shall not start until test documentation has been approved. After test documentation is approved, PROPOSER shall provide at least 20 working day's notice prior to all tests to permit the Commission to schedule and observe each test.

## I. TEST RESULTS AND ANALYSIS

1. The outcome of each test shall be compared with the specified functional performance and operational requirements. Failure to conform to the requirements of any test shall be considered a defect, and equipment and/or subsystems shall be subject to rejection by the Commission.
2. When an element unit is modified as a result of a defect, the PROPOSER shall prepare a report for the Commission's approval. The report shall describe the nature of the failure and the corrective action taken. If a failure pattern develops, the Commission may direct that design and construction modifications be made.
3. Equipment rejected because of defects limited to the specific unit being tested, may be offered for retest provided all non-compliant items have been corrected and re-tested by the PROPOSER and evidence thereof submitted to Commission.
4. The PROPOSER shall analyze and categorize all defects as to whether they are limited to the specific unit being tested or are potential problems for all units.



5. For the case of defects common to multiple units, all deliverable units shall be modified without additional cost to the Commission. This modification includes design changes required to pass design approval tests.
6. If any of the test results fail to conform to the requirements of the applicable Technical Parameter, the equipment, subsystem or system failing shall be considered a defective item and shall be subject to rejection by the Commission . Rejected elements, subsystem or system may be offered for re-test, provided all the defects have been rectified by the PROPOSER and/or manufacturer and the required documentation submitted thereof to the Commission.

## J. SYSTEM TESTING AND ACCEPTANCE

1. In addition to or as a supplement to all testing requirements described elsewhere in this part and the specifications, the PROPOSER shall conduct a full program of testing, the purpose of which shall be to demonstrate to the Commission's satisfaction that the System fulfills all of the specifications and requirements as set forth herein.
2. Pre-Acceptance Testing
  - a. The PROPOSER shall be allowed to proceed with pre-acceptance testing without regular monitoring by the Commission. Without interrupting the PROPOSER's installation and testing schedule, the Commission and its representatives shall reserve the right to review testing progress and to witness the PROPOSER pre-acceptance tests. Test milestones for pre-acceptance testing shall be reflected in the Project Plan and Schedule, and testing progress shall be documented in the PROPOSER's regularly issued project status reports. The PROPOSER shall conduct all pre-acceptance tests to ensure compliance with the specification requirements herein and design changes approved by the Commission. Before proceeding with the assembly and integration of the subsystem equipment the PROPOSER shall test each unit of installed equipment on a stand alone basis. Subsequent to stand-alone equipment testing, the PROPOSER shall test the software and hardware components as an integrated subsystem.
  - b. The PROPOSER shall certify the results of all pre acceptance tests and submit a certification to the Commission.
    1. Acceptance Testing Provisions - Prepare and deliver to the Commission a comprehensive Acceptance Test Plan that describes all the activities and tasks associated with testing during each test phase at least 30-days prior to the scheduled start of each test phase- System and Operational. The Acceptance Test Plan for each phase shall describe the activities and tasks associated with the tests to be performed during the appropriate acceptance test phase. At a minimum, the Acceptance Test Plan shall contain the following elements:
      - a. A summary statement of the purpose and goal of each test phase

- b. The method of testing
- c. A description of the overall test environment
- d. A block diagram of all equipment and components used in the test Configuration
- e. Specification of the hardware and software required for the test which describes the number and type of devices to be used, describes what real-world inputs and outputs will be simulated and how the inputs and outputs will be simulated
- f. A detailed matrix that identifies all design requirements and indicates where each requirement will be demonstrated as part of the test procedure. The matrix shall include, at a minimum, references to both the individual specification requirements and each approved design change.
- g. A detailed test procedure which:
  - 1. Demonstrates that every feature and function to be provided in the furnished hardware and software conforms to the requirements of the Contract
  - 2. Identifies the contract requirements to be demonstrated as part of each individual test procedure through the specific references to both the specification requirements and the approved design changes
  - 3. Identifies the steps for each test to be performed, test purpose, conditions which will exist at the start of the test, and conditions/results expected at the conclusion of the test
  - 4. Identifies the success/failure status of each test along with adequate space for comments of the test witness to be recorded
  - 5. Describes the outputs to be provided to the Commission to document the test results (reports, database listings, statistical analyses, message displays, etc.).
- h. After receipt of each Acceptance Test Plan, the Commission will review and comment on its content, and if necessary, the PROPOSER shall make appropriate changes to the Acceptance Test Plan to address the Commission's comments and resubmit the plan for Commission review and approval. The Commission requires a minimum of fifteen (15) workdays to review and comment or approves resubmitted test plans. Incorporate adequate time in the project schedule to address comments, resubmit a

- i. When all tests for a testing phase have been executed to the satisfaction of the Commission, prepare and deliver to the Commission an Acceptance Test Report along with the PROPOSER's written certification that the System has successfully passed all tests for that specific test phase. The Acceptance Test Report shall contain at a minimum the following sections:
  - Summary of the test phase
  - Description of the tests performed to include, test conditions at start and end of each test, expected test results with Pass/Fail criteria, actual test results, signature block for individuals who witnessed the successful completion of the test, itemized list of unresolved items that were not completely compliant with the contract items and require correction prior to initiation of the next level of testing
  - Action plan to conduct the next iteration of the test phase or a statement that the phase was completed successfully
- j. The Commission and its representatives will evaluate each Acceptance Test Report and notify the PROPOSER of its evaluation. No acceptance test phase shall be initiated without the Commission's written approval of the Acceptance Test Plan specific to that phase, and no test phase shall be considered complete, nor may the PROPOSER proceed to the next step until the Commission has approved, in writing, the PROPOSER's Acceptance Test Report for the previous phase.

#### K. RECORD KEEPING

1. The PROPOSER shall develop and maintain during the life of the contract, a comment and response tracking log to facilitate monitoring the progress of all required submittals. The tracking log shall take the form of a spreadsheet or database and clearly delineate the process of all submittals up to and including final approval.

#### L. PROJECT IMPLEMENTATION REQUIREMENTS

The PROPOSER shall at its own expense prepare, maintain and update a detailed project plan and schedule as it relates to Work of this Section.

1. Project Plan and Schedule

Within thirty (30) calendar days after receipt by the PROPOSER of the acceptance of his Proposal and notice to proceed, the PROPOSER shall submit a Project Plan and

Schedule to the Commission. The Project Plan and Schedule shall include Gantt charts with the critical path identified (using CPM) showing when tasks occur, when resources are required, and what task dependencies exist. The Project Plan and Schedule shall be of sufficient detail and clarity so that the Work can be reviewed and the Commission can monitor progress. The charts shall indicate a logical sequence of Work and identify all dependencies, personnel resources, material, equipment, and work areas required for completion of the Work. The degree of detail shall be sufficient to identify at a minimum:

- a. Major contract phases, milestones and deliverables as specified both within the PROPOSER's system development and installation methodology and those specifically identified herein.
- b. Project activities with associated tasks and sub-tasks.
- c. Interfaces and dependencies with preceding, concurrent, and succeeding work effort.
- d. Resources needed and assignments down to the task level for staff, material, and equipment.

In addition to the above, the Project Plan and Schedule shall contain a detailed schedule for delivery of training, and any changes, updates or new information related to the PROPOSER's project organization, methodologies and standards, facilities, Quality Assurance Program or any other requirement, deliverable or feature related to the performance of the System, different from the information which the PROPOSER included in its Proposal.

## 2. Installation Plan of Technology Components

Prepare and deliver to the Commission a detailed Installation Plan of Technology Components that describes all the activities and tasks associated with the installation, integration, configuration and preparation of the central computer servers and subsystem components including communications equipment of the System prior to field testing. The Installation Plan shall also detail the stages of the System setup and configuration including the estimated time of completion for each stage. This plan shall be submitted for the Commission's review, and only upon the Commission's approval of the Installation Plan shall the PROPOSER commence the required Work.

The Installation Plan shall include the identification and description of all activities, tasks and stages of construction to be used in bringing the System to a fully operational state without disruption to current operation of the facility. Elements of the plan shall include, but are not limited to: installation plan drawings and product installation literature for all primary components of the System; a schedule and plan for the installation of all devices and computer hardware, and the loading of all software (with emphasis on what precautions shall be taken to minimize disruption of current

operations); plans for the loading of the initial database; training; and. responsibilities for system administration during installation.

3. System Start-up and Initial System Administration - Once the Field Acceptance Testing has been successfully concluded, perform all activities necessary to ready the System for operation, including but not limited to:

- Instructions for System generation and loading of all initial data and parameters
- Data Initialization and Conversion (if any is required due to the PROPOSER's design)
- Initial database loading
- Initial Parameter Settings
- Adjustments of System parameters and thresholds to allow maximum performance and reliability shall be made as soon as practical.

The PROPOSER shall authorize and accept responsibility for application of power to equipment and initiation of operation, be responsible for running all initial diagnostics and System generation programs necessary to provide a complete working System.

4. Training

a. Training Plan - Submit to Commission for review and approval, a Training Plan which shall address Operator Training, Supervisor Training, System Administration Training and Maintenance Training. The Training Plan shall include at a minimum:

1. A description of all training courses including identification of the purpose and goals of each course, duration of the course, type of presentations (lectures, labs) and identification of the facility and training equipment requirements (e.g., lecterns, overhead projectors, televisions, video cassette recorders, specific System hardware elements, etc.).
2. A list of classroom instructors who shall conduct the training and description of their skills, experience and qualifications.
  - a. Individual course curricula, course materials, manuals, study guides and workbooks.
  - b. Course critique and evaluation forms for students.
  - c. Post-training and or on-the-job technical reference guides.
  - d. A detailed schedule for the delivery of all training courses.

After receipt of the Training Plan, the Commission will comment on its content. Make appropriate changes to the Training Plan and resubmit for review and approval.

b. Training Program

1. After approval of the Training Plan and prior to the beginning of the Field Acceptance Test, conduct the specified training to the staff. The training program shall be implemented through the use of formal classroom training and/or other forms of presentation as recommended by the PROPOSER. The curriculum shall be designed so that each group of trainees shall be trained in the full repertoire of System commands which they may have to use in the course of performing their designated functions. Students shall be provided with complete sets of training materials and operating manuals during the training sessions, which they shall retain for use on the job at the completion of training. Formal training shall also include a comprehensive student-testing program for determining that the intended training has been successfully imparted.
2. Submit to the Commission two (2) copies of each training manual for review and comment. After incorporating the Commission's comments, resubmit two (2) copies of each such manual until approved by the Commission. After approval by the Commission, submit to the Commission the number of copies of each approved manual as stipulated herein. In addition, submit three (3) CD-ROMS with an electronic version (PDF format) of the training manuals for future reproduction by the Commission.
3. Upon completion of each training program, prepare and submit to the Commission a training report which shall summarize the results of the training program, including a list of attendees and individual test results, course evaluation forms and recommendations for follow-up training or modifications to the curriculum.

c. Conduct of Training

1. Conduct the required training at the scheduled times and locations designated by the Commission consistent with the approved Training Plan. The full complement of training courses shall be conducted over the duration of this contract to accommodate shift personnel, vacations, new personnel and make-up sessions. The training shall include, but not be limited to, the following groupings of staff (with an estimated student population as stipulated herein).

<u>Staff Category</u>	<u>Number of Staff</u>
Operations	8
Supervisory/Management/ System Administrators	6
Maintenance Supervisors	6

d. Training Manuals

1. Provide the Training Manuals and any other associated course materials, study guides and workbooks, as described in the approved Training Plan. These manuals shall be for instructional use during the Training Program, for study and for refresher use to provide training of all the features and functions of the System during normal and emergency operations. These manuals shall also be suitable for the Commission use to train new operators, supervisors, system administrators and maintenance staff on an ongoing basis.

5. Operating Documentation

- a. Submit to the Commission two (2) copies each of “System Administrators Manual”, “Site Specific Manual” and “Supervisor’s Manual” for review and approval. After incorporating the Commission’s comments, resubmit two copies of each such manual until approved by the Commission. Submit to the Commission five (5) copies of the approved “Standard Operating Procedures Manual” and five (5) copies each of the approved “System Administrator’s Manual”, “Site Specific Manual” and “Supervisor’s Manual”. In addition, submit 3 CD-ROMs with a PDF version of each manual. The CD-ROMs shall have a label with the date and “FINAL APPROVED” stamp, along with the project name, and number.

1. Standard Operating Procedures Manual

A System Standard Operating Procedures Manual shall be provided which contains graphical depictions and explanations of system operation for all operator functions specified under Operator Training. This manual shall be for instructional, study and refresher use and shall explain all the features and functions of the System for day-to-day operation (e.g., log-on, monitors, prints daily reports). The manual shall also have a section for problems and/or exception conditions so the operator can resolve common operating problems (e.g., trouble shoot network problems, restart the System in the event of a component failure, clear jams). The manual shall also contain instructions on how to perform normal maintenance (e.g., changing paper for the printer). Submit to the Commission five (5) copies of approved Standard Operating Procedures manual and three (3) CD-ROM’s with PDF version of the full manual.

2. System Administrator’s Manual

A System Administrator’s Manual shall be provided which contains graphical depictions and written descriptions of all functions required for system maintenance and specified under System Administrator Training. This manual shall contain all procedures necessary for the proper monitoring and administration of the System. At a minimum, the manual shall contain separate

sections that cover the following topics: backup and recovery, performance analysis, scheduled maintenance, audit and control, report production, contingency plan, configuration control, system diagnostics, database integrity, special requests and expendable supplies. A separate, removable section of the System Administration Manual shall contain information on the proper administration and control of the security features built into the System. Some of the information to be contained in this section includes: maintenance of user identifiers, password control, and security policy review. This System Administrator's manual shall also include computer-generated listings of all system programs as an addendum under separate cover. Submit to the Commission five (5) copies of approved System Administrator's manual and three (3) CD-ROM's with PDF version of the full manual.

### 3. Supervisor's Manual

A Supervisor's Manual shall be provided with graphic descriptions of all functions and procedures required for system modifications specified under Supervisor Training. This manual shall contain all the instructions included in the Operator Procedures Manual plus instructions on printing standard and ad hoc reports. Submit to the Commission five (5) copies of approved Supervisor's manual and three (3) CD-ROM's with PDF version of the full manual.

### 4. System Preparation

After System installation and until the System is formally accepted by the Commission, the PROPOSER shall undertake and perform all System preparation activities to ensure a fully functioning System that operates in conformance to the requirements of the Contract. Such activities shall include, but not be limited to, the following:

- a. Systems monitoring; System and application backup and archiving; System fault detection, diagnosis and correction, database initialization and updates, and report generation.
- b. Administration and control of System access and backup security.
- c. Capacity management and performance monitoring.
- d. Management of hardware, firmware, and software configuration changes.
- e. System documentation maintenance.
- f. Training and System user assistance.
- g. Monitor and manage physical protection devices stipulated in Technical Parameter herein.

### 5. Close-Out

Upon successful completion of the 30-day Operational Test, prepare and submit to the Commission all materials necessary to close out the System design. This



shall include, but not be limited to: the delivery of a fully functioning System that meets all performance and expansion requirements and that has successfully completed factory, field and operational testing; the delivery and approval of all documentation and; the training of all management, supervisory, operations, system administration and maintenance staff, as specified in the training plan; all documentation necessary for the operation of the System whether or not it has been submitted as part of a previous deliverable. This includes but is not limited to: third party software documentation and licenses, software executable code, hardware documentation, final Operating Documentation and maintenance manuals.

#### 6. Schedule of Submittals

In concert with the progress schedule, the PROPOSER shall complete the following schedule of design submittals and fill in the submittal dates. Submittals shall be within the time stipulated in the “Schedule of PROPOSER’s Design Submittals” herein.

## SCHEDULE OF PROPOSER'S DESIGN SUBMITTALS

SUBMITTAL	Submit Date:
Progress Schedule in accordance with "PROGRESS SCHEDULE" requirements	_____
Engineering Design Submission Package (Hardware and Software)	_____
Project Plan and Schedule	_____
Installation Schedule and Plan	_____
Acceptance Test Plan (SAT and OAT)	_____
System Acceptance Test Report	_____
Operational Acceptance Test	_____
Equipment Exchange/Expansion Certificate(s) during Factory Testing (if any)	_____
Equipment Exchange/Expansion Certificate(s) during Field Testing (if any)	_____
Equipment Exchange/Expansion Certificate(s) during Operational Testing (if any)	_____
Training Plan	_____
Preliminary Training Manuals for Review	_____
Approved Training Manuals	_____
Training Program Report	_____
Digital video of Instruction (Operations)	_____
Digital video of Instruction (Supervisory)	_____
Digital video of Instruction (Administrators)	_____
Digital video of Instruction (Maintenance)	_____

Digital video of Instruction (Operations)	_____
Digital video of Equipment Operation	_____
Close-out Documentation	_____
Detailed Maintenance of Traffic Plans	_____
Structural Calculations	_____
Final Certified Set of Detailed Contract Drawings and Detailed Specifications	_____
Catalog Cuts and Data Sheets	_____
Shop Drawings for Signs and Poles	_____
Operation, Maintenance and Communication Protocol Manuals For Approval	_____
Final Operation, Maintenance and Communication Protocol Manuals	_____
Factory Inspection Test Procedures Executed Factory Inspection Test Results Document	_____
Reproducible Master Set of all Manual Documents	_____

**APPENDIX E**

**LOBBYING CERTIFICATION FORM**

# Lobbying Certification Form

## Certification for Contracts, Grants, Loans, and Cooperative Agreements

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

(1) 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 any 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.

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

(3) 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 is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed under Section 1352, Title 31, U.S. Code. 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 such failure.

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

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

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

## **APPENDIX F**

**DESIGNATED SPECIAL PROVISION 8 (DSP8)  
(PENNDOT PUB 408 APPENDIX C)**

**APPENDIX C**  
**DESIGNATED SPECIAL PROVISION 8 (DSP8)**  
**F. A. R. – REQUIRED CONTRACT PROVISIONS**  
**FEDERAL-AID CONSTRUCTION CONTRACTS**

**Table of Contents**

I. General	C8 - 2
II. Nondiscrimination	C8 - 2
III. Nonsegregated Facilities	C8 - 6
IV. Payment of Predetermined Minimum Wage	C8 - 6
V. Statements and Payrolls	C8 - 10
VI. Record of Materials, Supplies, and Labor	C8 - 12
VII. Subletting or Assigning the Contract	C8 - 12
VIII. Safety: Accident Prevention	C8 - 13
IX. False Statements Concerning Highway Projects	C8 - 13
X. Implementation of Clean Air Act and Federal Water Pollution Control Act	C8 - 14
XI. Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion	C8 - 14
XII. Certification Regarding Use of Contract Funds for Lobbying	C8 - 17

**Attachments**

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)	C8 - 19
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**I. GENERAL—**

- (a) These contract provisions shall apply to all work performed on the contract by the Contractor's own organization and with the assistance of workers under the Contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or subcontract.
- (b) Except as otherwise provided for in each section, the Contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
- (c) A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
- (d) A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, (b);

Section IV, (a), (b), (c), (d), and (g);

Section V, (a) and (b)1 through (b)7.

- (e) Disputes arising out of the labor standards provisions of Section IV (except (e)) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved according to the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the DOL, or the Contractor's employees or their representatives.
- (f) Selection of Labor: During the performance of this contract, the Contractor shall not:
  - 1. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
  - 2. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

**II. NONDISCRIMINATION—**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- (a) **Equal Employment Opportunity (EEO).** EEO requirements not to discriminate and to take affirmative action to ensure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the Contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the Contractor agrees to comply with the following minimum specific requirement activities of EEO:
  - 1. The Contractor will work with the Department and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.



2. The Contractor will accept as his/her operating policy the following statement:

"It is the policy of this Company to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age, or disability. Such action shall include: 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, preapprenticeship, and/or on-the-job training."

- (b) **EEO Officer.** The Contractor will designate and make known to the Department's contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
- (c) **Dissemination of Policy.** All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
  1. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every 6 months, at which time the Contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
  2. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the Contractor's EEO obligations within 30 days following their reporting for duty with the Contractor.
  3. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the Contractor's procedures for locating and hiring minority group employees.
  4. Notices and posters setting forth the Contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
  5. The Contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
- (d) **Recruitment.** When advertising for employees, the Contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
  1. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the Contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the Contractor for employment consideration.
  2. In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he/she is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
  3. The Contractor will encourage his/her present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

- (e) **Personnel Actions.** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age, or disability. The following procedures shall be followed:
1. The Contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
  2. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
  3. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
  4. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with his/her obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform every complainant of all of his/her avenues of appeal.
- (f) **Training and Promotion.**
1. The Contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
  2. Consistent with the Contractor's work force requirements and as permissible under Federal and State regulations, the Contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25% of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
  3. The Contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
  4. The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
- (g) **Unions.** If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the Contractor either directly or through a Contractor's association acting as agent will include the procedures set forth below:
1. The Contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
  2. The Contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age, or disability.

3. The Contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the Contractor, the Contractor shall so certify to the Department and shall set forth what efforts have been made to obtain such information.
  4. In the event the union is unable to provide the Contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the Contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the Department.
- (h) **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment.** The Contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
1. The Contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
  2. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts that the Contractor enters into pursuant to this contract. The Contractor will use his/her best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from Department personnel.
  3. The Contractor will use his/her best efforts to ensure subcontractor compliance with their EEO obligations.
- (i) **Records and Reports.** The Contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the FHWA.
1. The records kept by the Contractor shall document the following:
    - 1.a The number of minority and non-minority group members and women employed in each work classification on the project;
    - 1.b The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
    - 1.c The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
    - 1.d The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
  2. The Contractor will submit an annual report to the Department each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the Contractor will be required to collect and report training data.

**III. NONSEGREGATED FACILITIES—**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- (a) By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.
- (b) As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g., disabled parking).
- (c) The Contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

**IV. PAYMENT OF PREDETERMINED MINIMUM WAGE—**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

**(a) General.**

1. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination"), which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under (b) of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, (c)2, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in (d) and (e) of this Section IV.

2. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
3. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

**(b) Classification.**

1. The Department's contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
2. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
  - the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
  - the additional classification is utilized in the area by the construction industry;
  - the proposed wage rate, including any BONA FIDE fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
  - with respect to helpers, when such a classification prevails in the area in which the work is performed.
3. If the Contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
4. In the event the Contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
5. The wage rate (including fringe benefits where appropriate) determined pursuant to (b)3 or (b)4 of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

**(c) Payment of Fringe Benefits.**

1. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

2. If the Contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

**(d) Apprentices, Trainees (Programs of the U.S. DOL), and Helpers.**

**1. Apprentices.**

- 1.a Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
- 1.b The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed.
- 1.c Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits according to the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid according to that determination.
- 1.d In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

**2. Trainees.**

- 2.a Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

- 2.b** The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
- 2.c** Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits according to the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
- 2.d** In the event the Employment and Training Administration withdraws approval of a training program, the Contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

### **3. Helpers.**

- 3.a** Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV, (b). Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

### **(e) Apprentices and Trainees (Programs of the U.S. DOT).**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of (d) of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

### **(f) Withholding.**

The Department shall, upon its own action or upon written request of an authorized representative of the DOL, withhold, or cause to be withheld, from the Contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Department's contracting officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**(g) Overtime Requirements.**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in (d) and (e) above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

**(h) Violation.**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in (g) above, the Contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in (g), in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in (g).

**(i) Withholding for Unpaid Wages and Liquidated Damages.**

The Department shall, upon its own action or upon written request of any authorized representative of the DOL, withhold, or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in (h) above.

**V. STATEMENTS AND PAYROLLS—**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

**(a) Compliance with Copeland Regulations (29 CFR 3).**

The Contractor shall comply with the Copeland Regulations of the Secretary of Labor, which are herein incorporated by reference.

**(b) Payrolls and Payroll Records.**

1. Payrolls and basic records relating thereto shall be maintained by the Contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
2. The payroll records shall contain the name, social security number, and address of each such employee; his/her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for BONA FIDE fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, (a). Whenever the Secretary of Labor, pursuant to Section IV, (c)2, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the



Davis Bacon Act, the Contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

3. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the Department's Representative a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, (d) and (e), and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under (b)2 of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.
4. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  - that the payroll for the payroll period contains the information required to be maintained under (b)2 of this Section V and that such information is correct and complete;
  - that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
  - that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
5. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by (b)4 of this Section V.
6. The falsification of any of the above certifications may subject the Contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.
7. The Contractor or subcontractor shall make the records required under (b)2 of this Section V available for inspection, copying, or transcription by authorized representatives of the Department, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Department, the FHWA, the DOL, or all may, after written notice to the Contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR—**

- (a) On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the Contractor shall:
1. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
  2. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
  3. Furnish, upon the completion of the contract, to the Department's Representative on Form FHWA-47 together with the data required in (a)2 relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.
- (b) At the prime contractor's option, either a single report covering all contract work or separate reports for the Contractor and for each subcontract shall be submitted.

**VII. SUBLETTING OR ASSIGNING THE CONTRACT—**

- (a) The Contractor shall perform with its own organization contract work amounting to not less than 30% (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the Contractor's own organization (23 CFR 635).
1. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
  2. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
  3. The contract amount upon which the requirements set forth in (a) of Section VII is computed includes the cost of material and manufactured products, which are to be purchased or produced by the Contractor under the contract provisions.
  4. The Contractor shall furnish:
    - a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work according to the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and
    - such other of its own organizational resources (supervision, management, and engineering services) as the Department's contracting officer determines is necessary to ensure the performance of the contract.

5. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the Department's contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the Department has ensured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

#### **VIII. SAFETY: ACCIDENT PREVENTION—**

- (a) In the performance of this contract the Contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The Contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the Department's contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
- (b) It is a condition of this contract, and shall be made a condition of each subcontract, which the Contractor enters into pursuant to this contract, that the Contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, according to Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
- (c) Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

#### **IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS—**

In order to ensure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

##### **NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

- *"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*
- *Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*

- *Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;*
- *Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."*

## **X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT—**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

- (a) That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
- (b) That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
- (c) That the firm shall promptly notify the Department of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
- (d) That the firm agrees to include or cause to be included the requirements of (a) through (d) of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

## **XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION—**

### **(a) Instructions for Certification - Primary Covered Transactions.**

(Applicable to all Federal-aid contracts—49 CFR 29.)

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the Department's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the Department determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department may terminate this transaction for cause of default.

4. The prospective primary participant shall provide immediate written notice to the Department to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the Department to which this proposal is submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the Department entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under (a)6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department may terminate this transaction for cause or default.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Primary Covered Transactions**

- (a) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (a)2 of this certification; and
  4. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (b) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**(b) Instructions for Certification - Lower Tier Covered Transactions.**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions of \$25,000 or more—49 CFR 29)

1. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
2. The certification in this clause 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, in addition to other remedies available to the Federal Government, the Department with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. 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 lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "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.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under (b)5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

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

- (a) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING—**

(Applicable to all Federal-aid construction contracts and to all related subcontracts that exceed \$100,000—49 CFR 20)

- (a) The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his/her knowledge and belief, that:
  1. 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 any Federal 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.
  2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal 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," according to its instructions.

- (b) This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. 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.
- (c) The prospective participant also agrees by submitting his/her bid or proposal that he/she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.



**ATTACHMENT A—EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS**

(Applicable to Appalachian contracts only.)

- (a) During the performance of this contract, the Contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:
1. To the extent that qualified persons regularly residing in the area are not available.
  2. For the reasonable needs of the Contractor to employ supervisory or specially experienced personnel necessary to ensure an efficient execution of the contract work.
  3. For the obligation of the Contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (a)3 shall not exceed 20% of the total number of employees employed by the Contractor on the contract work, except as provided in subparagraph (d) below.
- (b) The Contractor shall place a job order with the State Employment Service indicating
- the classifications of the laborers, mechanics and other employees required to perform the contract work,
  - the number of employees required in each classification,
  - the date on which he/she estimates such employees will be required, and
  - any other pertinent information required by the State Employment Service to complete the job order form.
- The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the Contractor in the original job order is substantially modified, he/she shall promptly notify the State Employment Service.
- (c) The Contractor shall give full consideration to all qualified job applicants referred to him/her by the State Employment Service. The Contractor is not required to grant employment to any job applicants who, in his/her opinion, are not qualified to perform the classification of work required.
- (d) If, within 1 week following the placing of a job order by the Contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the Contractor, or less than the number requested, the State Employment Service will forward a certificate to the Contractor indicating the unavailability of applicants. Such certificate shall be made a part of the Contractor's permanent project records. Upon receipt of this certificate, the Contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (a)3 above.
- (e) The Contractor shall include the provisions of Sections (a) through (d) of this Attachment A in every subcontract for work, which is, or reasonably may be, done as on-site work.

**APPENDIX G**  
**BUY AMERICA**

when they have been actually incorporated in accepted items of work, or in the cost of such materials meeting the criteria and stockpiled at the locations specified in §635.114 of this chapter.

(d) To be eligible for Federal participation in its cost, any material, other than local natural materials, to be purchased by the State transportation department and furnished to the contractor for mandatory use in the project, must have been acquired on the basis of competitive bidding, except when there is a finding of public interest justifying the use of another method of acquisition. The location and unit price at which such material will be available to the contractor must be stated in the special provisions for the benefit of all prospective bidders. The unit cost eligible for Federal participation will be limited to the unit cost of such material to the State transportation department.

(e) When the State transportation department or another public agency owns or has control over the source of a local natural material the unit price at which such material will be made available to the contractor must be stated in the plans or special provisions. Federal participation will be limited to (1) the cost of the material to the State transportation department or other public agency; or (2) the fair and reasonable value of the material, whichever is less. Special cases may arise that will justify Federal participation on a basis other than that set forth above. Such cases should be fully documented and receive advance approval by the FHWA Division Administrator.

(f) Costs incurred by the State transportation department or other public agency for acquiring a designated source or the right to take materials from it will not be eligible for Federal participation if the source is not used by the contractor.

(g) The contract provisions for one or a combination of Federal-aid projects shall not specify a mandatory site for the disposal of surplus excavated materials unless there is a finding by the State transportation department with the concurrence of the FHWA Division Administrator that such placement is

the most economical except that the designation of a mandatory site may be permitted based on environmental considerations, provided the environment would be substantially enhanced without excessive cost.

**§ 635.409 Restrictions upon materials.**

No requirement shall be imposed and no procedure shall be enforced by any State transportation department in connection with a project which may operate:

(a) To require the use of or provide a price differential in favor of articles or materials produced within the State, or otherwise to prohibit, restrict or discriminate against the use of articles or materials shipped from or prepared, made or produced in any State, territory or possession of the United States; or

(b) To prohibit, restrict or otherwise discriminate against the use of articles or materials of foreign origin to any greater extent than is permissible under policies of the Department of Transportation as evidenced by requirements and procedures prescribed by the FHWA Administrator to carry out such policies.

**§ 635.410 Buy America requirements.**

(a) The provisions of this section shall prevail and be given precedence over any requirements of this subpart which are contrary to this section. However, nothing in this section shall be construed to be contrary to the requirements of §635.409(a) of this subpart.

(b) No Federal-aid highway construction project is to be authorized for advertisement or otherwise authorized to proceed unless at least one of the following requirements is met:

(1) The project either: (i) Includes no permanently incorporated steel or iron materials, or (ii) if steel or iron materials are to be used, all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes which protect or enhance the value of the material to which the coating is applied.

(2) The State has standard contract provisions that require the use of domestic materials and products, including steel and iron materials, to the same or greater extent as the provisions set forth in this section.

(3) The State elects to include alternate bid provisions for foreign and domestic steel and iron materials which comply with the following requirements. Any procedure for obtaining alternate bids based on furnishing foreign steel and iron materials which is acceptable to the Division Administrator may be used. The contract provisions must (i) require all bidders to submit a bid based on furnishing domestic steel and iron materials, and (ii) clearly state that the contract will be awarded to the bidder who submits the lowest total bid based on furnishing domestic steel and iron materials unless such total bid exceeds the lowest total bid based on furnishing foreign steel and iron materials by more than 25 percent.

(4) When steel and iron materials are used in a project, the requirements of this section do not prevent a minimal use of foreign steel and iron materials, if the cost of such materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the steel and iron products as they are delivered to the project.

(c)(1) A State may request a waiver of the provisions of this section if:

(i) The application of those provisions would be inconsistent with the public interest; or

(ii) Steel and iron materials/products are not produced in the United States in sufficient and reasonably available quantities which are of a satisfactory quality.

(2) A request for waiver, accompanied by supporting information, must be submitted in writing to the Regional Federal Highway Administrator (RFHWA) through the FHWA Division Administrator. A request must be submitted sufficiently in advance of the need for the waiver in order to allow time for proper review and action on the request. The RFHWA will have approval authority on the request.

(3) Requests for waivers may be made for specific projects, or for certain materials or products in specific geographic areas, or for combinations of both, depending on the circumstances.

(4) The denial of the request by the RFHWA may be appealed by the State to the Federal Highway Administrator (Administrator), whose action on the request shall be considered administratively final.

(5) A request for a waiver which involves nationwide public interest or availability issues or more than one FHWA region may be submitted by the RFHWA to the Administrator for action.

(6) A request for waiver and an appeal from a denial of a request must include facts and justification to support the granting of the waiver. The FHWA response to a request or appeal will be in writing and made available to the public upon request. Any request for a nationwide waiver and FHWA's action on such a request may be published in the FEDERAL REGISTER for public comment.

(7) In determining whether the waivers described in paragraph (c)(1) of this section will be granted, the FHWA will consider all appropriate factors including, but not limited to, cost, administrative burden, and delay that would be imposed if the provision were not waived.

(d) Standard State and Federal-aid contract procedures may be used to assure compliance with the requirements of this section.

[48 FR 53104, Nov. 25, 1983, as amended at 49 FR 18821, May 3, 1984; 58 FR 38975, July 21, 1993]

EDITORIAL NOTE: For a waiver document affecting § 635.410, see 60 FR 15478, Mar. 24, 1995.

#### **§ 635.411 Material or product selection.**

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

## **APPENDIX H**

### **DAVIS-BACON WAGE ACT REQUIREMENTS**

GENERAL DECISION: PA20100004 08/27/2010 PA4

Date: August 27, 2010

General Decision Number: PA20100004 08/27/2010

Superseded General Decision Number: PA20080004

State: Pennsylvania

Construction Types: Heavy and Highway

Counties: Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Cameron, Centre, Clarion, Clearfield, Clinton, Crawford, Elk, Erie, Fayette, Forest, Franklin, Fulton, Greene, Huntingdon, Indiana, Jefferson, Lawrence, McKean, Mercer, Mifflin, Potter, Somerset, Venango, Warren, Washington and Westmoreland Counties in Pennsylvania.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS (excluding sewer grouting projects and excluding sewage and water treatment plant projects)

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	03/26/2010
3	04/02/2010
4	04/16/2010
5	05/07/2010
6	06/04/2010
7	06/11/2010
8	07/02/2010
9	07/30/2010
10	08/06/2010
11	08/27/2010

BOIL0013-005 01/01/2010

CENTRE, FRANKLIN, POTTER, CLINTON, FULTON, HUNTINDON AND MIFFLIN COUNTIES

	Rates	Fringes
BOILERMAKER.....	\$ 38.08	28.05

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BOIL0154-004 06/01/2009

ALLEGHENY, ARMSTRONG, BEAVER, BEDFORD, BLAIR, BUTLER, CAMBRIA, CAMERON, CLARION, CLEARFIELD, CRAWFORD, ELK, FAYETTE, FOREST, GREENE, INDIANA, JEFFERSON, LAWRENCE, MCKEAN, MERCER, SOMERSET, VENANGO, WARREN, WASHINGTON AND WESTMORELAND COUNTIES

	Rates	Fringes
BOILERMAKER.....	\$ 36.70	20.82

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BOIL0744-003 07/01/2008

ERIE COUNTY

	Rates	Fringes
BOILERMAKER.....	\$ 35.34	18.48
-----		
BRPA0009-023 12/01/2009		

BEAVER COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 26.40	14.90
-----		
BRPA0009-024 12/01/2009		

WASHINGTON (Cross Creek, Hanover, Jefferson, Mt Pleasant,  
Nottingham, Peters, Robinson, Smith, Union Twps) COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 28.30	14.75
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BRPA0009-025 12/01/2009		

BUTLER, LAWRENCE, AND MERCER COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 26.40	14.78
-----		
BRPA0009-032 12/01/2009		

FAYETTE (Jefferson & Washington Twps), GREENE (Except  
Cumberland, Dunkirk, Greene, Monongahelia Twps), INDIANA, AND  
WESTMORELAND (Rostraver Twp) COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 27.55	14.84
-----		
BRPA0009-033 12/01/2009		

ARMSTRONG, CLARION (Brady, Madison, Perry, Tobe, Porter,  
Redbank Twps), FAYETTE (Except Jefferson & Washington Twps),  
GREENE (Cumberland, Dunkirk, Greene, Monongahelia Twps),  
INDIANA, AND WESTMORELAND (Except Rostrave Twp) COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 27.53	14.86
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BRPA0009-034 11/01/2009		

ERIE COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 24.89	14.34

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 CARP2235-005 01/01/2010

	Rates	Fringes
PILEDRIVERMAN		
Piledriverman (welder).....	\$ 30.25	12.25
Piledriverman.....	\$ 29.95	12.25

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 CARP2235-006 01/01/2007

	Rates	Fringes
Diver.....	\$ 40.40	10.77
Tender.....	\$ 26.93	10.77

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 CARP2274-001 01/01/2010

	Rates	Fringes
CARPENTER (ALLEGHENY, ARMSTRONG, BEAVER, BUTLER, ERIE, FAYETTE, GREENE, LAWRENCE, MERCER, WASHINGTON, AND WESTMORELAND COUNTIES)		
Carpenter (Welders).....	\$ 29.18	12.56
Carpenters.....	\$ 28.48	12.56
CARPENTER (BEDFORD, BLAIR, CAMBRIA, CAMERON, CENTRE, CLARION, CLINTON, CLEARFIELD, CRAWFORD, ELK, FOREST, FRANKLIN, FULTON, HUNTINGDON, INDIANA, JEFFERSON, MCKEAN, MIFFLIN, POTTER, SOMERSET, VENANGO, AND WARREN COUNTIES)		
Carpenters (Welders).....	\$ 28.94	12.56
Carpenters.....	\$ 28.23	12.56

-----  
 ELEC0005-006 12/25/2009

ALLEGHENY, ARMSTRONG, BEDFORD, BLAIR, BUTLER CAMBRIA, CAMERON,  
CENTRE (Remainder), CLARION, CLEARFIELD, ELK, FAYETTE, FULTON,  
GREENE, HUNTINGDON, INDIANA, JEFFERSON, MCKEAN, SOMERSET,  
VENANGO, WASHINGTON, AND WESTMORELAND COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 34.26	17.88

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 ELEC0056-004 06/01/2010

ERIE, FOREST AND WARREN COUNTIES

	Rates	Fringes
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ELECTRICIAN.....	\$ 26.40	18.25
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ELEC0126-005 01/01/2010

ALLEGHENY, ARMSTRONG, BEAVER, BEDFORD, BLAIR, CAMBRIA, CENTRE,  
CLARION, CLEARFIELD, FAYETTE, FULTON, GREENE, HUNTINGDON,  
INDIANA, JEFFERSON, SOMERSET, WASHINGTON AND WESTMORELAND

	Rates	Fringes
Line Construction:		
Groundman.....	\$ 21.53	17.40
Lineman.....	\$ 38.00	17.40
Truck Driver.....	\$ 23.09	26%+5.55
Truck driver.....	\$ 23.43	17.40
Winch Truck Operator.....	\$ 24.96	26%+5.55
Winch truck operator.....	\$ 25.33	17.40

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ELEC0126-007 01/01/2010

FRANKLIN AND MIFFLIN COUNTIES

	Rates	Fringes
Line Construction:		
Groundman.....	\$ 20.25	16.79
Lineman.....	\$ 35.73	16.79
Truck Driver.....	\$ 21.36	26%+5.55
Truck driver.....	\$ 22.03	16.79
Winch Truck Operator.....	\$ 23.10	26%+5.55
Winch truck operator.....	\$ 23.82	16.79

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\* ELEC0143-007 06/01/2010

FRANKLIN and MIFFLIN COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 27.55	3%+15.47

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ELEC0712-003 03/02/2009

CRAWFORD, BEAVER, LAWRENCE AND MERCER COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 29.20	17.48

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ELEC0812-008 06/01/2009

CLINTON COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 25.29	16.35

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ELEC0812-009 06/01/2009

POTTER COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 26.30	16.38

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ELEC0812-011 06/01/2009

CENTRE COUNTY (Burnside, Curtin, Liberty, Howard, Marion,  
Walker, Miles, Haines Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 26.30	16.38

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ELEC1319-004 08/31/2008

BUTLER, CAMERON, CLINTON, CRAWFORD, ELK, ERIE, FOREST,  
LAWRENCE, MCKEAN, MERCER, VENANGO, WARREN AND POTTER COUNTIES

	Rates	Fringes
Line Construction:		
Groundman.....	\$ 24.53	17.13
Heavy Equipment Operator....	\$ 39.17	17.13
Lineman.....	\$ 39.57	17.13
Truck Drivers.....	\$ 25.72	17.13

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ENGI0066-016 01/01/2010

	Rates	Fringes
Power equipment operators:		
(ALLEGHENY, ARMSTRONG,		
BEAVER, BLAIR, BUTLER,		
CAMBRIA, CENTRE, CLARION,		
CLEARFIELD, CRAWFORD, ERIE,		
ELK, FAYETTE, GREENE,		
INDIANA, JEFFERSON, LAWRENCE,		
MCKEAN, MERCER, SOMERSET,		
VENANGO, WARREN, WASHINGTON,		
AND WESTMORELAND COUNTIES)		
GROUP 1.....	\$ 27.18	14.99
GROUP 2.....	\$ 26.92	14.99
GROUP 3.....	\$ 23.27	14.99
GROUP 4.....	\$ 22.81	14.99
GROUP 5.....	\$ 22.56	14.99
Power equipment operators:		
(BEDFORD, CAMERON, CLINTON,		
FOREST, FRANKLIN, FULTON,		
HUNTINGDON, MIFFLIN, AND		
POTTER COUNTIES)		
GROUP 1.....	\$ 26.89	14.99
GROUP 2.....	\$ 26.61	14.99
GROUP 3.....	\$ 22.97	14.99

GROUP 4.....	\$ 22.48	14.99
GROUP 5.....	\$ 22.27	14.99

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 - Asphalt Paving Machine (Spreader), Autograde (C.M.I. and similar); Backfiller, Compactor with Blade, Backhoe - 360 and 180 degree Swing; Cableway; Caisson Drill (similar to Hugh Williams), Central Mix Plant; Cooling Plant; Concrete Paving Mixer, Concrete Pump (self-propelled); Cranes; Cranes (boom or mast over 101ft.\$50 per each additional 50 feet inclusive of jib), Cranes (Tower Stationary- Climbing Tower Crane); Derrick; Derrick Boat; Dozer(greater than 25,000 lbs.); Dragline; Dredge; Dredge Hydraulic; Elevating Grader; Franki Pile Machine; Gradall (remote control or otherwise), Grader (power-fine grade); Hllift (4 cy. and over); Hoist 2 Drums or more (in one unit); Hydraulic Boom Truck with pivotal cab (single motor-Pitman or similar), (Boom and Mast over 101 feet will be paid an additional 50 feet inclusive of jib if used;); Kocal; Mechanic, Locomotive (std. Gauge); Metro-chip Harvester or similar; Milling Machine (Roto Mill or similar); Mix Mobile; Mix Mobile (with Self Loading Attachment), Mucking Machine (tunnel); Pile Driver Machine; Pipe Extrusion Machine; Prespliter Drill (self contained); Refrigeration Plant (soil Stablization) Rough Terrain Crane (25 ton over) (Boom and Mast over 101 feet will be paid an additional 50 feet inclusive of jib if used); Rough Terrain Crane (under 25 ton), Scrapers; Shovel-Power; Slip form Paver (C.M.I. and similar); Trenching Machine (30,000 lbs. and over), Trenching Machine (under 30,000 lb.), Tunnell Machine (Mark XXI Jarva or similar), Vermeer Saw, Whirley, Mechanic, Compactor with blade

GROUP 2: Asphalt plant operator; auger (tractor mtd.); auger (truck mtd.); belt loader (euclid or similar); boring machine; cable placer or layer; Directional drill over 3,000 lbs thrust; concrete batch plant (electronically synchronized); concrete belt placer (C.M.I. and similar); concrete finishing machine and spreader, concrete mixer (over 1 cy.) concrete pump (stationary); core drill (truck or skid mtd. - similar to penn drill), dozer (25,000 lbs or less); Ditch Witch Saw, force feedloader; fork lift (lull or similar); grader - power; grease unit opertor (head); guard rail post driver (truck mounted) guard rail post driver (skid type); hilift (under 4 cy.); skid steer loader; hydraulic boom truck (non-pivotal cab); job work boat (powered), jumbo operator; locomotive (narrow guage); minor equipment operator (accumulative four units); mucking machine; multi-head saw (groover); overhead crane; roller -power- asphalt; ross carrier; side boom or tractor mounted boom; shuttle buggy (asphalt), stone crusher (screening-washing plants); stone spreader (self propelled) truck mounted drill (davey or similar); welder and repairman; well point pump operator.

GROUP 3: Broom Finisher (C.M.I. or similar);

Compactors/Rollers (static or vibratory (Self-propelled) on dirt or stone; Curb Builder; Minor Equipment Operator (two or three units); Multi-head Tie Tamper; Pavement Breaker (self-propelled or ridden); Soil Stabilizer Machine; Tire Repairman; Tractor (snaking and hauling); Well Driller and Horizontal: Winch or "A" Frame Truck (when hoisting and lowering).

GROUP 4: Ballast Regulator; Compressor; Concrete Mixer (1 cy. & under with skip); Concrete Saw (Ridden or self-propelled); Conveyor; Elevator (Material hauling only); Fork-lift (Ridden or self-propelled); Form Line Machine; Generator; Grout Pump; Heater (Mechanical); Hoist (single Drum); Ladavator, Light Plant; Mulching Machine; Personnel Boat (Powered), Pulverizer, Pumps, Seeding Machine, spray Cure Machine (powered Driven); Subgrader; Tie Puller; Tugger; Welding Machine (Gas or Diesel).

GROUP 5: Deck Hand; Farm Tractor; Fireman on Boiler; Oiler; Power Broom; Side Delivery Shoulder Spreader (attachment);

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IRON0003-001 06/01/2010

ALLEGHENY, FAYETTE, WESTMORELAND, CAMBRIA, INDIANA, ARMSTRONG, BUTLER, BEAVER, CLARION, AND WASHINGTON COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 30.03	22.55

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IRON0207-002 06/01/2009

LAWRENCE, MERCER, AND VENANGO COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 26.66	16.83

-----  
IRON0348-002 06/01/2009

CRAWFORD, ERIE, FOREST, AND WARREN COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 25.33	20.17

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IRON0404-008 07/01/2010

FRANKLIN (Remainder), HUNTINGDON (Remainder), AND MIFFLIN COUNTIES

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 27.77	23.05

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IRON0549-002 12/01/2008

GREENE COUNTY

	Rates	Fringes
IRONWORKER.....	\$ 28.75	10%+15.69

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IRON0568-004 05/01/2009

BEDFORD, FRANKLIN (Southwest 1/3), FULTON, HUNTINGDON (Western 2/3), AND SOMERSET COUNTIES

	Rates	Fringes
Ironworkers:		
Sheeter, Bucker-Up.....	\$ 26.33	12.88
Structural, Ornamental, Reinforcing, Machinery Mover, Rigger & Machinery Erector, Welder, Fence Erector.....	\$ 26.08	12.88

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IRON0772-001 06/01/2009

BLAIR, CAMERON, CENTRE, CLEARFIELD, CLINTON, ELK, JEFFERSON,  
MCKEAN AND POTTER COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 24.73	19.94+A

A. HOLIDAYS

The following holidays shall be observed: New Years Day,  
Goodfriday, Memorial Day, Fourth of July, Labor Day,  
Veterans Day (Observed the day after Thanksgiving),  
Thanksgiving Day, Christmas Day.

Any holiday which occurs on Sunday shall be observed the  
following Monday.

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LABO1058-001 01/01/2010

	Rates	Fringes
LABORER (BEDFORD, CAMERON, CENTRE, CLINTON, CRAWFORD, FOREST, FRANKLIN, FULTON, HUNTINGDON, JEFFERSON, MIFFLIN, AND POTTER COUNTIES)		
GROUP 1.....	\$ 23.65	13.55
GROUP 2.....	\$ 23.81	13.55
GROUP 3.....	\$ 24.30	13.55
GROUP 4.....	\$ 24.75	13.55
GROUP 5.....	\$ 25.16	13.55
GROUP 6.....	\$ 22.00	13.55
GROUP 7.....	\$ 24.65	13.55
GROUP 8.....	\$ 26.50	13.55

Laborers: (ALLEGHENY,  
ARMSTRONG, BEAVER, BLAIR,  
BUTLER, CAMBRIA, CLARION,  
CLEARFIELD, ELK, ERIE,  
FAYETTE, GREENE, INDIANA,  
LAWRENCE, MCKEAN, MERCER,  
SOMERSET, VENANGO, WARREN,  
WASHINGTON, AND WESTMORELAND  
COUNTIES)

GROUP 1.....	\$ 23.75	13.55
GROUP 2.....	\$ 23.91	13.55
GROUP 3.....	\$ 24.30	13.55
GROUP 4.....	\$ 24.75	13.55
GROUP 5.....	\$ 25.16	13.55
GROUP 6.....	\$ 22.00	13.55
GROUP 7.....	\$ 24.75	13.55
GROUP 8.....	\$ 26.25	13.55

#### LABORERS CLASSIFICATIONS

GROUP 1: Asphalt curb sealer; Asphalt tamper; Batcherman (weigh) Blaster, Boatman, Brakeman, Change house attendant, Cofferdam, Concrete curing pitman, Puddler, Drill Runner's helper (Includes Drill Mounted on Truck, Track, or similar and Davey Drill Spots, Clean up, helps to maintain), Electric Brush and or Grinder, Fence Construction (Including Fence Machine Operator) Form stripper and Mover, Gabion (Erectors and Placers) Hydro jet blaster nozzleman; Landscape laborer, Manually moved emulsion sprayer, Radio actuated traffic control operator Rip rap work, scaffolds and Runways, Sheet piers and Shoring (includes lagging) structural concrete Top Surfer, Walk Behind Street Sweeper, and Wood Chipper; water boy

GROUP 2: Air tool operator (all types); Asphalt, batch & concrete plant operator (manually operated) Burner, Caisson; men (open air); Carryable pumps; Chain saw operator including attachments, Cribbing, (concrete or steel); Curb machine operator (asphalt or concrete walk behind); Diamond head Core Driller, Drill runner's helper (tunnel) Fork Lift, (walk behind), Form Setter (Road Forms Line man) Highway Slab reinforcement placers (including joint and Basket Setters) Hydraulic pipe pusher; Liner plates (Tile or Vitrified Clay) Mechanical compacting equipment operators, Mechanical joint sealer, Dope pot and Tar Kettle, Mortar mixer (hand or machine) Muckers, Brakemen & all other Labor, (Includes installation of utility lines) Pipe Layers /Fusion /Heating Iron (Regardless of materials) Portable Single Unit Conveyor, Post Hole Auger, (2 or 4 cycle hand operated) Power wheelbarrows and buggies, Rail porter or similar; Sand blaster; Signal Man, Vibrator operator, All RAILROAD TRACK WORK TO INCLUDE THE FOLLOWING: adzing machine, ballast Router, Bolting Machine, Power Jacks, Rail Drills, Railroad Brakeman, Rail Saws, Spike Drivers (Manually or hand held tool) Spike Pullers Tamping Machine, Thermitweld

GROUP 3: Asphalt Luteman/Raker,Blacksmith, Blaster, Brick, stone and block pavers and block cutters (wood, belgian and asphalt); Cement mortar lining car pusher; Cement mortar mixer (pipe relining); Cement mortar pipe reliners; concrete saw operator (walk behind); Curb cutters and setters; Elevated roadway drainage construction; erector of overhead signs, Form setter (road forms-lead man); Grout machine operator; Gunitite or dry pack gun (nozzle and machine man); Manhole or catch basin builder (Brick block concrete or any prefabrication) Miners and drillers (including lining, supporting and form workmen, setting of shields, miscellaneous equipment and jumbos); Multi-plate pipe (aligning and securing); Placing wire mesh on gunitite projects; Wagon drill operators (air track or similar); Walk behind ditching machine (trencher or similar);crown screed adjuster and welder

GROUP 4: Reinforcing Steel Placer (Bending, aligning, and securing, Cadweld)

GROUP 5:High Burner, (Any burning not done from deck), Welder (Pipeline)

GROUP 6: Uniformed Flagperson, Watchman

GROUP 7: Toxic/Hazardous Waste Removal Laborer Levels C & D

GROUP 8: Toxic/Hazardous Waste Removal Laborer Levels A & B

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PAIN0021-019 05/01/2010

CLINTON COUNTY

	Rates	Fringes
Painters:		
Bridge.....	\$ 29.60	13.00
Brush & Roller.....	\$ 23.30	13.00
Spray.....	\$ 24.30	13.00

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PAIN0021-024 05/01/2010

FRANKLIN COUNTY

	Rates	Fringes
PAINTER		
Brush.....	\$ 22.57	9.60

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PAIN0057-014 06/01/2010

ALLEGHENY, FAYETTE, GREEN, WASHINGTON COUNTIES

	Rates	Fringes
Painters:		
Bridge.....	\$ 30.48	13.34

Brush & Roller.....	\$ 25.28	13.34
Spray.....	\$ 25.28	13.34

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PAIN0057-015 06/01/2010

ARMSTRONG, BEAVER, BEDFORD, BLAIR, BUTLER, CAMBRIA, CENTRE,  
CLARION, CLEARFIELD, ELK, FULTON, HUNTINGTON, INDIANA,  
JEFFERSON, LAWRENCE, MERCER, MIFFLIN, SOMERSET, VENANGO AND  
WESTMORELAND COUNTIES

	Rates	Fringes
Painters:		
Bridge.....	\$ 30.48	13.34
Brush and Roller.....	\$ 25.28	12.63
Spray.....	\$ 25.28	12.63

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PAIN0057-022 05/01/2010

	Rates	Fringes
Painters: (ERIE, McKEAN, AND WARREN (Including Columbus and Freehold twps) COUNTIES)		
Bridges, Stacks, Towers.....	\$ 22.77	12.30
Brush and Roller.....	\$ 20.77	12.30
Spray and Sandblasting.....	\$ 21.52	12.30

-----  
PAIN0057-027 06/01/2010

CAMERON, CRAWFORD, POTTER, WARREN, (Excluding Columbus and  
Freehold twps)

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 21.85	12.70

-----  
PLAS0526-002 01/01/2010

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Beaver, Cameron, Clarion, Crawford, Elk, Forest, Lawrence, McKean, Potter, Venango and Warren Counties.....	\$ 27.62	13.42
Bedford, Blair, Cambria, Centre, Clinton, Huntingdon, Mifflin and Somerset Counties.....	\$ 27.62	13.42
All Other Counties.....	\$ 27.62	13.42

-----  
PLUM0027-001 06/01/2010

ALLEGHENY, ARMSTRONG, GREENE (Except extreme Eastern portion),



WASHINGTON (Except extreme Eastern portion) and WESTMORELAND  
(City of Arnold and City of New Kensington Only) COUNTIES

	Rates	Fringes
Plumbers and Pipefitters (Bridge Drain Pipe).....	\$ 34.75	17.57
-----		
PLUM0047-005 05/01/2010		

BEAVER, BUTLER, MCKEAN, MERCER, VENANGO, CLARION, LAWRENCE,  
FOREST, WARREN, CRAWFORD, AND ERIE COUNTIES

	Rates	Fringes
Plumbers and Pipefitters (Bridge Drain Pipe).....	\$ 35.42	18.01
-----		
PLUM0354-005 06/01/2010		

BEDFORD, BLAIR, CAMBRIA, CAMERON, CLEARFIELD, ELK, FAYETTE,  
GREENE (Extreme Eastern portion), HUNTINGDON, INDIANA,  
JEFFERSON, SOMERSE, WASHINGTON (Extreme Eastern portion), AND  
WESTMORELAND COUNTIES

	Rates	Fringes
Plumbers and Pipefitters (Bridge Drain Pipe).....	\$ 34.25	18.73
-----		
TEAM0040-001 01/01/2010		

	Rates	Fringes
TRUCK DRIVER (ALLEGHENY, ARMSTRONG, BEAVER, BLAIR, BUTLER, CAMBRIA, CENTRE, CLARFIELD, CRAWFORD, ERIE, FAYETTE, GREENE, INDIANA, JEFFERSON, LAWRENCE, MCKEAN, MERCER, SOMERSET, VENANGO, WARREN, WASHINGTON, AND WESTMORELAND)		
GROUP 1.....	\$ 24.98	\$12.04+a+b
GROUP 2.....	\$ 25.13	\$12.11+a+b
GROUP 3.....	\$ 25.64	\$12.37+a+b
Truck drivers: (BEDFORD, CAMERON, CLAIRON, CLINTON, ELK, FOREST, FRANKLIN, FULTON, HUNTINGDON, MIFFLIN, AND POTTER COUNTIES)		
GROUP 1.....	\$ 24.80	\$11.95+a+b
GROUP 2.....	\$ 24.98	\$12.04+a+b
GROUP 3.....	\$ 25.49	\$12.29+a+b

FOOTNOTES: A. Hazardous/toxic waste material/work level A  
& B receive additional \$2.50 per hour above classification

rate

B. Hazardous/toxic waste materials/Work level C & D receive \$1.00 per hour above classification

#### TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Single Axle (2 axles including steering axle);  
Includes partsman and warehoueman

GROUP 2 - Tandem - Tri-Axle - Semi-Tractor Trailer  
(combination) (3 axles or more including steering axle)

GROUP 3 - Specialty Vehicles; Heavy equipment whose capacity exceeds that for which state licenses are issued specifically refers to units in excess of eight (8) feet width (such as Euclids, Atley Wagon, Payloader, Tournawagons, and similar equipment when not self loaded); Tar and Asphalt Distributors Trucks, Heavy Duty Trailer, such as Low Boy, High Boy

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
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With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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Wage and Hour Division  
U.S. Department of Labor  
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2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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U.S. Department of Labor  
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Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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## END OF GENERAL DECISION

GENERAL DECISION: PA20100014 09/10/2010 PA14

Date: September 10, 2010

General Decision Number: PA20100014 09/10/2010

Superseded General Decision Number: PA20080014

State: Pennsylvania

Construction Types: Heavy and Highway

Counties: Adams, Berks, Bradford, Carbon, Columbia,  
Cumberland, Dauphin, Juniata, Lackawanna, Lancaster, Lebanon,

Lehigh, Luzerne, Lycoming, Monroe, Montour, Northampton, Northumberland, Perry, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming and York Counties in Pennsylvania.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS (Excluding Sewer Grouting Projects and Excluding Sewage and Water Treatment Plant Projects)

Modification Number	Publication Date
0	03/12/2010
1	04/09/2010
2	04/30/2010
3	05/07/2010
4	05/28/2010
5	06/04/2010
6	07/02/2010
7	07/09/2010
8	07/30/2010
9	08/06/2010
10	09/10/2010

BOIL0013-003 01/01/2010

	Rates	Fringes
BOILERMAKER.....	\$ 38.08	28.05

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CARP0076-011 05/01/2008

COLUMBIA, MONTOUR, NORTHUMBERLAND, SCHUYLKILL, SNYDER, UNION, the lower part of Luzerne county, Carbon County, Banks, Lusanna, Lehigh, Packer, Kidder townships, and part of Penn Forest

	Rates	Fringes
MILLWRIGHT.....	\$ 26.56	13.02

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CARP0191-002 05/01/2008

YORK COUNTY

	Rates	Fringes
MILLWRIGHT.....	\$ 26.56	13.02

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CARP0287-009 05/01/2008

ADAMS, CUMBERLAND, DAUPHIN, JUNIATA, LANCASTER, LEBANON, PERRY, NEW CUMBERLAND ARMY DEPOT AND HARRISBURG YORK STATE AIRPORT IN YORK COUNTY

	Rates	Fringes
MILLWRIGHT.....	\$ 26.56	13.02

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CARP0454-008 07/01/2010

Lehigh and Northampton Counties

	Rates	Fringes
PILEDRIVERMAN.....	\$ 37.60	27.02

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CARP0492-002 06/01/2010

BERKS COUNTY

	Rates	Fringes
MILLWRIGHT.....	\$ 26.71	11.02

-----  
CARP0600-005 05/01/2009

LEHIGH AND NORTHAMPTON COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 30.99	19.67

-----  
CARP1906-002 07/01/2008

CARBON (Townships: East Penn, Lower Towamensing, Mahoning, Franklin, Towamensing, Penn Forest. Everything south of Route 903 and east to the Kidder Township Line. Boroughs: Hauto, Nesquehoning, Lansford, Summit Hill, Jim Thorpe, Weissport, Bownmanstown, Palmerton, Lehigh, and Parryville) , LEHIGH AND NORTHAMPTON COUNTIES

	Rates	Fringes
MILLWRIGHT.....	\$ 31.95	21.40

-----  
CARP2274-002 05/01/2010

EXCEPT LEHIGH AND NORTHAMPTON COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 25.98	10.83

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CARP2274-003 05/01/2010

Adams, Berks, Bradford, Carbon, Columbia, Cumberland, Dauphin, Juniata, Lackawanna, Lancaster, Lebanon, Luzerne, Lycoming, Monroe, Montour, Northumberland, Perry, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Wyoming and York

	Rates	Fringes
PILEDRIVERMAN.....	\$ 25.98	10.83

ELEC0126-001 01/01/2010

	Rates	Fringes
Line Construction: (ADAMS, CUMBERLAND, DAUPHIN, LANCASTER, LEBANON, JUNIATA, PERRY AND YORK COUNTIES)		
Groundman.....	\$ 20.25	16.79
Lineman.....	\$ 35.73	16.79
Truck Operator.....	\$ 21.36	26%+\$5.55
Truck operator.....	\$ 22.03	16.79
Winch Truck Operator.....	\$ 23.10	26%+\$5.55
Winch truck operator.....	\$ 23.82	16.79
Line Construction: (BERKS AND LEHIGH NORTHAMPTON COUNTIES)		
Groundman.....	\$ 20.25	16.79
Lineman.....	\$ 36.73	16.79
Truck Driver.....	\$ 22.03	16.79
Winch Truck Operator.....	\$ 23.82	16.79

-----  
ELEC1319-001 08/31/2008

BRADFORD, CARBON, COLUMBIA, LACKAWANNA, LUZERNE, LYCOMING,  
MONROE, MONTOUR, NORTHUMBERLAND, PIKE, SCHUYLKILL, SNYDER,  
SULLIVAN, SUSQUEHANNA, TIOGA, UNION, WAYNE, AND WYOMING COUNTIES

	Rates	Fringes
Line Construction:		
Equipment Operators.....	\$ 39.17	17.13
Groundmen.....	\$ 24.53	17.13
Lineman.....	\$ 39.57	17.13
Truck Drivers.....	\$ 25.72	17.13

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\* ENGI0542-004 05/01/2010

	Rates	Fringes
Power equipment operators: (HIGHWAY CONSTRUCTION AND WATER LINES CONSTRUCTION (OFF PLANT SITE))		
GROUP 1.....	\$ 28.79	17.26
GROUP 1a.....	\$ 31.04	17.94
GROUP 2.....	\$ 27.61	16.92
GROUP 3.....	\$ 26.91	16.72
GROUP 4.....	\$ 26.46	16.59
GROUP 5.....	\$ 25.95	16.44
GROUP 6.....	\$ 29.03	17.32
GROUP 6a.....	\$ 31.28	17.98

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 - Pile drivers, all types of cranes, all types of  
backhoes, draglines, keystones, all types of shovels,  
derricks, trench shovels, trenching machines, paver

(blacktop and concrete), gradalls, all front end loaders, tandem scrapers, pippin types backhoes, boat captains, batch plant with mixer, drill self contained (drill-master type), CMI Autograde, milling machine, vemeer saw, conveyor loader (euclid type) scraper and tournapulls, bulldozers and tractors, concrete pumps, motor patrols, mechanic welders, log skidder, side boom, bobcat type (with attachments), boring machines including directional boring machines, chipper with boom, hydro ax, machines similar to the above including remote control equipment.

GROUP 1a: Crawler backhoes and Crawler gradalls over one cubic yard factory rating; Hydraulic backhoes over one cubic yard factory rating; All types of cranes 15 ton and over factory rating; Single person operation truck cranes 15 ton and over factory rating; Cherry picker type machinery and equipment 15 ton and over factory rating; Machines similar to above, including remote control equipment; Equipment in this Wage Group that does not require an oiler.

GROUP 2 - Spreaders, asphalt plant engineers, rollers (high grade finishing), machine similar to above, including remote control equipment, and forklifts 20ft and over.

GROUP 3 - Welding machine, well points, compressors, pump heaters, farm tractors, form line graders, ditch witch type trencher, road finishing machines, concrete breaking machines, rollers, miscellaneous equipment operator, seaman pulverizing mixer, power broom, seeding spreader, tireman - (for power equipment ) conveyors, loaders other than EUC type, conveyors, driller second class, machines similar to the above including remote control equipment, and forklift under 20 ft.

GROUP 4 - Fireman and grease truck

GROUP 5 - Oilers and deck hands

GROUP 6 - All machines with booms (including jibs, masts, leads, etc.) 100 ft. and over.

GROUP 6a: All machines with Booms (including Jibs, Masts, Leads, etc.) 100 feet 15 ton and over factory rating; Machines similar to above, including remote control equipment; Equipment in this Wage Group that does not require an oiler.

\*\*\*TOXIC/HAZXARDOUS WAST REMOVAL\*\*\*

Add 20 per cent to basic hourly rate for all classifications

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\* ENGI0542-022 05/01/2010

Rates

Fringes

Power equipment operators:

(HEAVY CONSTRUCTION:)

GROUP 1.....	\$ 30.76	17.85+A
GROUP 1a.....	\$ 33.01	18.51+A
GROUP 2.....	\$ 30.47	17.77+A
GROUP 2a.....	\$ 32.72	18.44+A
GROUP 3.....	\$ 27.55	16.91+A
GROUP 4.....	\$ 26.41	16.58+A
GROUP 5.....	\$ 25.96	16.45+A
GROUP 6.....	\$ 25.09	16.18+A

HEAVY CONSTRUCTION:

FOOTNOTE:

A: PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day, the employee works the day before and the day after the holiday.

\*\*\*TOXIC/HAZZARDOUS WASTE REMOVAL\*\*\*

Add 20 per cent to basic hourly rate for all classifications

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Machines doing hook work, any machine handling machinery, cable spinning machines, helicopters, machines similar to the above, including remote control equipment, all types of cranes, cableways, and draglines.

GROUP 1a: Machines doing hook work; Machines handling machinery; All types of cranes 15 ton and over factory rating; Cable ways; Draglines 15 ton and over factory rating; High Rail/Burro Crane 15 ton and over factory rating; Rail Loader (Winch Boom Type) 15 ton and over factory rating; Machines similar to above, including remote control equipment; Equipment in this Wage Group that does not require an oiler.

GROUP 2: Backhoes, keystones, shovels, derricks, trench shovels, trenching machines, hoist with two towers, pavers 21E and over, overhead cranes, building hoists (double drum) gradalls, mucking machines in tunnels, front end loaders, tandem scrapers, pippin type backhoes, boat captains, batch plant operators concrete drills, self-contained rotary drills, fork lifts, 20ft, lift and over, scrapers, tournapulls, spreaders, bulldozers and tractors, rollers (high grade finishing), mechanic-welder, motor patrols, concrete pumps, grease truck, bob cat type (all attachments), boring machines including directional boring machines, hydro ax, side boom, vermeer saw, chipper with boom, machines similar to the above including remote control equipment

GROUP 2a: Crawler backhoes and crawler gradalls over one cubic yard factory rating; Hydraulic backhoes over one cubic yard factory rating; Equipment 15 ton and over factory rating; Machines similar to above, including remote



control equipment; Equipment in this Wage Group that does not require an oiler.

GROUP 3: Conveyors, building hoist (single drum), high or low pressure boilers, drill operators, well drillers, asphalt plant engineers, ditch witch type trencher, second class driller, forklift truck under 20ft. lift, stump grinder, tireman (for power equipment), machines similar to above including remote control equipment.

GROUP 4: Welding machines, well points, compressors, pumps, heaters, farm tractors, form line graders, road finishing machines, concrete breaking machines, rollers, seaman pulverizing mixer, power boom, seeding spreader, chipper without boom, machines similar to the above including remote control equipment.

GROUP 5: Fireman.

GROUP 6: Oilers and deck hands (personnel boats).

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IRON0036-002 07/01/2009

CARBON, LEHIGH (Except Fogelsville), NORTHAMPTON AND MONROE (Except Tobyhanna Army Depot)

	Rates	Fringes
Ironworkers:		
Projects Over 25 Million		
Dollars.....	\$ 33.55	22.42
Projects Under 25 Million		
Dollars.....	\$ 33.05	22.42

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IRON0404-006 07/01/2010

ADAMS, CUMBERLAND, DAUPHIN, LEBANON (Western 3/4), LANCASTER (Western part), LYCOMING, MONTGOMERY, NORTHAMPTON, JUNIATA, PERRY, SCHUYLKILL (Western tip to include the twps. of Fearnot, Good Spring, Hegins, Jolett, Klingers town, Muir, Pittman Haas, Rough and Ready, Sacramento, Spring Glen, Suedberg, Tower City, and Valley View), SNYDER, UNION, AND YORK COUNTIES

	Rates	Fringes
Ironworkers:.....	\$ 27.77	23.05

-----  
IRON0420-006 07/01/2010

BERKS, LANCASTER (Eastern Part), LEBANON (Eastern 1/4), LEHIGH (Fogelsville), AND SCHUYLKILL (Remainder) COUNTIES

	Rates	Fringes
Ironworkers:		
Projects less than		
\$200,000,000.....	\$ 28.50	22.00

STRUCTURAL, ORNAMENTAL,  
AND REINFORCING: Projects  
\$200,000,000 and greater,  
(all work).....\$ 29.00 22.00

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IRON0489-002 07/01/2009

BRADFORD, COLUMBIA, LACKAWANNA, LUZERNE, MONROE (Tobyhanna  
Depot only), PIKE, SULLIVAN, TIOGA, SUSQUEHANNA, WAYNE,  
WYOMING, CARBON (Northern tip - McAdoo), LYCOMING (Southern tip  
- Hughesville)

	Rates	Fringes
Ironworkers:		
Structural and Ornamental...	\$ 30.07	22.75

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LABO0158-001 05/01/2010

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 16.77	11.88
GROUP 2.....	\$ 23.39	11.88
GROUP 3.....	\$ 20.38	11.88
GROUP 4.....	\$ 20.73	11.88
GROUP 5.....	\$ 21.40	11.88
GROUP 6.....	\$ 20.82	11.88
GROUP 7.....	\$ 21.11	11.88
GROUP 8.....	\$ 21.59	11.88

#### LABORERS CLASSIFICATIONS

GROUP 1: Flag person

GROUP 2: Hazardous/Toxic/Asbestos Waste Handler, Lead Paint  
Handler

GROUP 3: concrete pitman, puddlers, highway guide rail right  
of way and property fence slab reinforcement placers,  
Laborers, landscaper, seeders, planters, magazine tenders,  
laser beam men for pipe laying and paving machines,,  
railroad trackman, signalman, asphalt rakers, asphalt  
tamper, lute or screed man, pneumatic and electric tool  
operators, jackmammers, paving breakers, concrete saws,  
whacker vibrator, chainsaw, highway concrete block layers,  
sheet hammer, pipe layers, Walk Behind Rollers, Walk Behind  
Trencher

GROUP 4: Caisson-open air below 8 feet, cofferdam open air  
below 8 feet where excavations for circular caissons and  
cofferdams 8 ft and below level of natural grade adjacent  
to starting point, form setters (road) wagon drill diamond  
point drill, gunite nozzle operators, walk behind rollers  
and concrete rubbers, blaster.

GROUP 5: Form Setter, Reinforced Steel Placer, Bonding

Aligning and Securing and Burning and welding in  
Conjunction with Rebar, and Concrete Surfacers.

FREE AIR TUNNELS AND ROCK SHAFTS

GROUP 6: Outside labers in conjunction with tunnels and rock  
shafts

GROUP 7: Chuck tenders, muckers, nippers, miners, inside  
laborers

GROUP 8: Miners, drillers, blasters, pneumatic shield  
operators, lining, spotting and timber workmen, rebar steel  
placer, bonding and securing, welders, and concrete  
surfacers

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PAIN0021-026 05/01/2010

ADAMS, CUMBERLAND, DAUPHIN, LANCASTER, PERRY, AND YORK COUNTIES

	Rates	Fringes
Painters:		
Bridge.....	\$ 28.45	9.60
Brush.....	\$ 22.57	9.60
Spray, Sandblast.....	\$ 23.57	9.60

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PAIN0057-021 06/01/2010

JUNIATA COUNTY

	Rates	Fringes
Painters: (Commercial)		
Brush and Roller.....	\$ 25.28	13.34
Industrial Brush & Roller...	\$ 27.84	13.34
Spray.....	\$ 25.28	13.34
Painters: (Industrial)		
Bridge.....	\$ 30.48	13.34
Brush and Roller.....	\$ 27.84	13.34
Spray.....	\$ 28.38	13.34

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PAIN1021-001 05/01/2009

BERKS, CARBON, LEBANON, LEHIGH, NORTHAMPTON, AND MONROE COUNTIES

	Rates	Fringes
Painters:		
Bridge; Brush, Roller.....	\$ 25.60	12.30
Bridge; Spray.....	\$ 26.60	12.30
Brush and Roller.....	\$ 24.75	12.30
Spray and Sandblast.....	\$ 25.75	12.30

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PAIN1021-002 05/01/2009

BRADFORD, COLUMBIA, LACKWANNA, LUZERNE, LYCOMING, MONTGOMERY,

NORTHUMBERLAND, PIKE, SCHUYLKILL, SNYDER, SULLIVAN,  
SUSQUEHANNA, TIOGA, UNION, WAYNE, WYOMING COUNTIES

	Rates	Fringes
Painters:		
Bridge; Brush, Roller.....	\$ 25.60	12.05
Bridge; Spray.....	\$ 26.60	12.05
Brush and roller.....	\$ 22.75	12.05
Spray, Sandblast.....	\$ 23.75	12.05

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PLAS0592-004 06/01/2010

MONROE COUNTY; (EXCEPT TOBYHANNA DEPOT)

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 29.00	8.38

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PLAS0592-005 06/01/2010

COLUMBIA COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 29.00	8.38

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PLAS0592-017 05/01/2009

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER BERKS (Northeastern part lying North of a line starting from the Southern boundary line of Lehigh County continuing through Huffs Church, Fredericksville, Dryville, Lyon Station, Kutztown, Krumsville, and Stoney run in Berks County to the Lehigh County line), CARBON, LEHIGH, NORTHAMPTON (Northwest part including the towns of Walnutport, Bath, and Northampton) COUNTIES.....	\$ 25.60	16.33

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PLAS0592-018 05/01/2009

	Rates	Fringes
Cement Mason/Concrete Finisher Adams, Lancaster, and York Counties.....	\$ 25.35	15.05
PLASTERER		

Adams, Berks (Portions of), Lancaster, and Lebanon Counties.....	\$ 23.70	12.96
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PLAS9592-002 05/01/2000

MONROE COUNTY (TOBYHANNA ARMY DEPOT)

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 21.88	4.05

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\* TEAM0229-003 05/01/2010

	Rates	Fringes
TRUCK DRIVER (ADAMS, BERKS, CARBON, COLUMBIA, CUMBERLAND, DAUPHIN, JUNIATA, LACKAWANA, LANCASTER, LEBANON, LEHIGH, LUZERNE, LYCOMING, MONROE, MONTGOMERY, NORTHAMPTON, NORTHUMBERLAND, PERRY, PIKE, SCHUYLKILL, SNYDER, SULLIVAN, SUSQUEHANNA, UNION, WAYNE, WYOMING, AND YORK COUNTIES)		
GROUP 1.....	\$ 29.58	0.00
GROUP 2.....	\$ 29.65	0.00
GROUP 3.....	\$ 30.14	0.00
Truck drivers: (BRADFORD AND TIOGA COUNTIES)		
GROUP 1.....	\$ 19.19	9.89
GROUP 2.....	\$ 19.26	9.89
GROUP 3.....	\$ 19.75	9.89

#### TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Flat Bed Truck (Single-Axle), Dump Trucks (Under 10 Yds Single Axle), Stake Body Truck (Single Axle), Dumpster (Single Axle)

GROUP 2: Dump Truck (Over 10 Yds), Asphalt Distributors, Transit Mix (Under 5 Yds), Transit Mix (Over 5 Yds.), Flat or Stake Body (Tandem), Fuel Truck A-Frame/Winch Trucks, Dry Batch Truck, Truck Mounted Sweeper and Vac Trucks, Buses, Dumpster (Tandem)

GROUP 3: Euclid-Type, Off Highway Equipment-Back or Double Bottom Dump Trucks (Over 20 Tons), Straddle Trucks, Pusher, Articulate Dumped Trucks, Low Boy Trailers, Semi Trailers

Water Tank, Sprinkler Trucks, Winch Trucks and Fuel Trucks shall be governed by the appropriate classification as listed above.

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WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

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## END OF GENERAL DECISION

GENERAL DECISION: PA20100006 09/10/2010 PA6

Date: September 10, 2010

General Decision Number: PA20100006 09/10/2010

Superseded General Decision Number: PA20080006

State: Pennsylvania

Construction Types: Heavy and Highway

Counties: Bucks, Chester, Delaware, Montgomery and Philadelphia Counties in Pennsylvania.

## HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	04/30/2010
2	05/28/2010
3	06/04/2010
4	06/11/2010
5	06/18/2010
6	06/25/2010
7	07/02/2010
8	07/09/2010
9	07/30/2010
10	08/06/2010
11	08/27/2010
12	09/03/2010
13	09/10/2010

BOIL0013-003 01/01/2010

Rates

Fringes

BOILERMAKER.....	\$ 38.08	28.05
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CARP0454-003 07/01/2010

	Rates	Fringes
PILEDRIVERMAN.....	\$ 37.60	27.02

Footnote: PAID HOLIDAYS: Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (provided the employee works the day before the holiday and the day after the holiday).

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CARP0845-005 05/01/2010

	Rates	Fringes
CARPENTER.....	\$ 38.05	23.40

FOOTNOTE:

A. PAID HOLIDAY: LABOR DAY

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CARP1906-001 07/01/2009

	Rates	Fringes
MILLWRIGHT		
Buck and Chester Counties...	\$ 35.13	25.44
Delaware, Montgomery and		
Phildelphia Counties.....	\$ 35.13	25.44

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ELEC0098-001 05/04/2009

BUCKS COUNTY: Starting at the Delaware River and following the west limits of the Borough of Bristol, along the continuation of U.S. Highway 13 and under the Pennsylvania Railroad Bridge to Route 09113, north 09113 to Route 152, north along Route 152 to the Humeville Road, east on Humeville Road to Route 333, north on Route 344 to the junction of Spurs 281 and 252, continue north on Spur 252 to Route 09028, west on 09028 to Route 152, north on 152 to TR 232, north on TR 532 to Tr 113, north on TR 113 to TR 232 at Anchor Inn, northeast on TR 232 and continue northeast along Rounte 659 to Route 09060, west on 09060 to Route 402, north on 402 to the Borough line at the southwest corner of the Borough of New Hope. The Bouough of New Hpoe is excluded.Starting at the Delaware at the Delaware River and proceeding southwest along the Plumstead-Solebury and the Plumstead-Buckingham Township lines to Route 09064, northwest on 09064 to U.S. Highway 611 south on 611 to the spur of Route 270, northwest along the spur to Route 397, Southwest on 397 to Route 350, southeast on 350 to Route 395, southwest on 395 to Route 09060, southeast on 09069 to Route 09041 southwest on 09041 to the Montgomery County line.

DELAWARE COUNTY: That portion east of a line following State Highway 320 from Montgomery County to Maple, then along the Springfield Road to Saxer Ave, along Saxer Avenue to Powell



Road, along Powell Road to State Highway 420 and continuing in a straight line to the Delaware River. MONTGOMERY COUNTY: That portion southeast of a line following Lower State Road from Bucks County southwest to the Bethlehem Pike (U.S Highway 309), south on the Bethlehem Pike to the Penllyn Pike, southwest on the Penllyn and Blue Bell Pikes to the Wissahickon Creek, southeast on the Wissahickon Creek to the Butler Pike to North Lane near Conshohocken Borough, southwest on North Lane to Schuylkill River and continuing southeast in a line to the Spring Mill Road and southwest on the Spring Mill Road to Delaware County. PHILADELPHIA COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 46.85	24.14
-----		
ELEC0102-003 06/01/2009		

BUCKS COUNTY (Plumstead, Bedminster, Tinicum, Nockomixon, Bridgeton and Durham Townships in their entireties, and that portion of Haycock and Springfield Townships east of a line following State Highway 412, from Northampton County south to Route 09071 to State Highway 212, along Highway 212 to Route 09068, and along 09068 to State Highway 313. Also included is that portion of Bublin Borough east of State Highway 313

	Rates	Fringes
ELECTRICIAN.....	\$ 46.86	24.02
-----		
* ELEC0126-002 05/31/2010		

CHESTER, DELAWARE, MONTGOMERY, PHILADELPHIA, AND REMAINDER OF BUCKS COUNTY

	Rates	Fringes
Line Construction:		
Groundhand.....	\$ 27.70	17.54
Groundman.....	\$ 25.28	19.10
Lineman.....	\$ 44.62	24%+7.50
Truck Driver.....	\$ 30.00	17.54
Truck driver.....	\$ 27.51	19.10
Winch Truck Operator.....	\$ 32.34	17.54
Winch truck operator.....	\$ 29.74	19.10
-----		
ELEC0269-001 01/01/2010		

BUCKS COUNTY (Area East of a line starting at the Delaware River and following the west limits of the Borough of Bristol, along the continuation of U.S. Highway 13 and under the Pennsylvania Railroad Bridge to Route 09113, north along 09113 to route 152, north along route 152 to the Hulmeville Rd., east on the Hulmeville to Route 344, north on route 344 to the junction of Spurs 281 and 252 continue north on spur 252 and route 09028, west on 09028 to Route 152, north on 152 to TR 532, north on TR 532 to TR 113, north on TR 113 to TR 232 as

Anchor Inn, northeast on TR 232 and continue northeast along 659 to Route 09060, West on 09060 to Route 402, north on 402 to the Borough Line at the southwest corner of the Borough of New Hope; including the Boroughs of New Hope and Bristol)

	Rates	Fringes
ELECTRICIAN.....	\$ 47.34	53.3%+.25

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ELEC0269-002 10/02/2006

BUCKS COUNTY - That portion east of a line starting at the Delaware River and following the west limits of the Borough of Bristol, along the continuation of U.S. Highway 13 and under the Pennsylvania Railroad Bridge to Route 09113, north along 09113 to route 152, north along route 152 to the Hulmeville Rd., east on the Hulmeville to Route 344, north on route 344 to the junction of Spurs 281 and 252 continue north on spur 252 and route 09028, west on 09028 to Route 152, north on 152 to TR 532, north on TR 532 to TR 113, north on TR 113 to TR 232 as Anchor Inn, northeast on TR 232 and continue northeast along 659 to Route 09060, West on 09060 to Route 402, north on 402 to the Borough Line at the southwest corner of the Borough of New Hope. The Boroughs of New Hope and Bristol are included.

	Rates	Fringes
Line Construction:		
Groundman, Truck Driver, and Winch Operato.....	\$ 35.58	51%+.25
Groundman, Truck Driver, and Winch Operator.....	\$ 34.00	51%+.25
Lineman, Cable Splicer, Heavy Equipment Operator....	\$ 44.48	51%+.25

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ELEC0313-003 12/01/2005

DELAWARE COUNTY :(That portion south of U.S. Highway No. 1 and west of U.S. Highway No. 202) Chester County (That portion South and east of U. S. Highway 1)

	Rates	Fringes
ELECTRICIAN.....	\$ 31.09	17.44

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ELEC0375-001 06/01/2010

BUCKS COUNTY (East Rock Hill, West Rock Hill, Milford and Richland Townships in their entirety and that portion of Haycock and Springfield Townships west of a line following State Highway 212 from Northampton County South to Route 09071 along 09071 to state Highway 212, along Highway 212 to Route 09068 and along 09068 to State Highway 313) MONTGOMERY COUNTY(Upper Hanover Twp.in its entirety)

Rates	Fringes
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ELECTRICIAN.....	\$ 37.60	12.33
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 ELEC0380-001 08/31/2009

BUCKS COUNTY (Hilltown and New Britain Townships in their entirety; that portion of Telford Borough Northeast of County Line Road (Main Street) and bounded by West Rock Hill and Hilltown Township that portion of Dublin Borough West of State Highway 313, and that portion of Doylestown and Warrington Townships and Doylestown Borough Northwest of a line following U.S. Highway 611 South from Route 09064 to the spur of Route 270, and proceeding Northwest along the spur to Route 397, Southwest on 397 to Route 350, Southeast on 350 to Route 395, Southwest on 395 to Route 09069, Southeast on 09069 to Route 09041, Southwest on 09041 to the Montgomery County Line)

DELAWARE COUNTY (The portion of Radnor Township North of U.S Highway 30 and West of State Highway 320) MONTGOMERY COUNTY (The portion Northwest of a line following Lower State Road from Bucks County Southwest to Bethlehem Pike (U.S. Highway 309), South on Bethlehem Pike to Penllyn Pike, Southwest on the Penllyn and Blue Bell Pikes to Wissahickon Creek to the Butler Pike, Southwest Wissahickon Creek to Butler Pike, Southwest on Butler Pike, to North Lane near Conshohocken Borough, Southeast on North Lane to the Schuylkill River and continuing Southeast in a line to Spring Mill Road, Southwest on Spring Mill Road to Delaware County; but excluding Upper Hanover, Douglas, Upper Pottsgrove, West Pottsgrove Townships and also excluding that portion of the Borough of Pottstown North and West of a line drawn Northeast on Kein Street from the Schuylkill River to Reading Railroad Northwest on the railroad to Madison Street, to High Street, East on High Street to Green Street, North on Green Street and Northeast on Mintzer Street to Lower Pottsgrove Township Line, along this township line and the borough line Northwest to Adams Street and Beehive Road, Northeast on Beehive Road to the Township Line at Mervine Street)

CHESTER COUNTY (East Coventry. East Vincent, West Vincent, East Pikeland, West Pikeland, Uwchlan, Upper Uwchlan, East Brandywine, Schuylkill and Charleston Townships in their entirety, and that portion of Clan, East Clan, East Whiteland & West Whiteland, Tredyffrin, Willistown, Easttown Townships and Borough of Downingtown north of U. S.Highway 30 )

	Rates	Fringes
ELECTRICIAN.....	\$ 38.38	21.92

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 ELEC0654-001 06/01/2009

DELAWARE COUNTY (The portion south of U.S. Highway 30 and north of that part U.S. Highway 1 between U.S. Highway 202 and the Chester County Line, and east of that part of U.S. Highway 202 between U.S. Highway 1 and the Delaware Line, and west of a line extending from Montgomery County along State Route 320 to Maple, then along the Springfield Road to Saxer Avenue, along Saxer Avenue to Powell Road; along Powell Road to State Highway

420; along 420 and continuing in a straight line to the Delaware River in the State of Pennsylvania) CHESTER COUNTY (That portion south of U. S. Highway 30 and north of that part of U.S. Highway 1)

	Rates	Fringes
ELECTRICIAN.....	\$ 38.10	17.14%+12.69
-----		
ELEC0743-001 09/01/2009		

CHESTER (Coatesville, Honey Brook, South Coventy, Valley, Wallace, Warwich, West Brandywine, West Clan, and West Nantmeal Twps); AND MONTGOMERY (Douglas, Pottstown, Upper Pottsgrove, and West Pottsgrove, Twps) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 31.62	14.45
-----		
New Year's Day, Good Friday, Memorial Day, Fourth of July, Labor Day, Veterans' Day, Thanksgiving Day, and Christmas Day.		
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ELEC0743-007 09/01/2009		

CHESTER COUNTY (The portion of Sadsbury and West Sadsbury Township north of U.S. Highway 30)

	Rates	Fringes
ELECTRICIAN.....	\$ 31.62	14.45
-----		
* ENGI0542-005 05/01/2010		

	Rates	Fringes
Power equipment operators: (HEAVY, HIGHWAY, AND WATER LINE CONSTRUCTION (Off Plant Site))		
GROUP 1.....	\$ 40.04	21.57
GROUP 1a.....	\$ 43.04	22.46
GROUP 2.....	\$ 39.79	21.50
GROUP 2a.....	\$ 42.80	22.38
GROUP 3.....	\$ 35.71	20.29
GROUP 4.....	\$ 35.40	20.21
GROUP 5.....	\$ 33.68	19.70
GROUP 6.....	\$ 32.69	19.41

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Handling steel and stone in connection with erection, cranes doing hook work, any machine handling machinery, helicopters, concrete pumps building machines similar to the above, including remote control equipment.

GROUP 1a: Machines handling steel, or the functional equivalent, and stone in connection with erection 15 ton and over factory rating; Cranes doing hook work 15 ton and over factory rating; Any machines handling machinery; High Rail/Burro Crane 15 ton and over factory rating; Rail Loader (Winch Boom Type) 15 ton and over factory rating; Concrete Pumps (Building) 120 feet of Boom length or less (200 yard pour or less); Machines similar to above, including remote control equipment; Equipment in this Wage Group that does not require an oiler.

GROUP 2: All types of cranes, All types of backhoes, Cableways, Draglines, Keystones, all types of shovels, Derricks, Pavers 21E and over, Trenching machines, Trench shovel, Graddalls, Front-End loaders, Boat Captain, Pippin type backhoes, Tandems scrapers, Towers type crane operation erecting, Dismantling, Jumping or Jacking, Drills (self-contained), (drillmaster type) forklift (20 ft. and over), Motor patrols (fine grade), Batch plant with mixer, Carryalls, Scraper, Trounapulls, Roller (Hith Grade Finishing), Spreaders (asphalt), Bulldozers and Tractors, Mechanic welder, Conveyor loaders (euclid-type wheel), Concrete pump, Milling Machines, Hoist with two towers, Building hoist double drum (unless used as a single drum), Mucking machines in tunnel, All auto grade and concrete finishing machines, Bundle pullers/extractors (tublar), toxic/hazardous waste removal rate 20 per cent added to all classification, bobcat, side broom, directional boring machines, vermeet saw type machines ( other than hand held) tractor mounted hydro axe, chipper with boom, all machine similar to the above including remote control equipment.

3: Asphalt plant engineers, Well drillers, Ditch witch (small trencher), Motor patrols, Fine grade machines, Ten-ton roller (grade fill stone base), Concrete breaking machines, Guilloline only, Stump grinder, Conveyors (except building conveyors), Fork lift trucks of all types, High pressure boliers, Machine similar to the above, including remote control equipment.

GROUP 2a: Crawler backhoes and Crawler gradalls over one cubic yard factory rating; Hydraulic backhoes over one cubic yard factory rating; All types of cranes 15 ton and over factory rating; Single person operation truck cranes 15 ton and over factory rating; Cherry picker type machinery and equipment 15 ton and over factory rating; Concrete Pumps (Heavy/Highway); Machines similar to above, including remote control equipment; Equipment in this Wage Group that does not require an oiler.

GROUP 3: Asphalt plant engineers, Well drillers, Ditch witch (small trencher), Motor patrols, Fine grade machines, Ten-ton roller (grade fill stone base), Concrete breaking machines, Guilloline only, Stump grinder, Conveyors (except building conveyors), Fork lift trucks of all types, High pressure boliers, Machine similar to the above, including remote control equipment.

GROUP 4: Seaman, Pulverzer form line grader, Farm tractors, road finishing, Concrete spreader, Power broom (self-contained), Seed spreader, Grease truck.

GROUP 5: Compressors pumps, Well point pumps, Welding machines Tireman, Power equipment, Maintenance engineer (power boats), and macnines similar to the above.

GROUP 6: Fireman, Oilers and deck hands (personnel Boats), grease truck.

FOOTNOTE: A. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day and Christmas Day

**\*\*TOXIC/HAZARDOUS WASTE REMOVAL\*\***

Add 20 per cent to basic hourly rate for all classifications

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IRON0068-003 07/01/2010

BUCKS COUNTY (Remainder)

	Rates	Fringes
Ironworkers:.....	\$ 34.35	18.28
Structural, Ornamental, and Reinforcing		

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IRON0401-001 07/01/2010

BUCKS (Includes the towns of BEnsalem, Breadysville, Bristol Churchville, Cornwells Heights, Davisville, Eddington, Feasterville, Hartsville, Johnsville, Line Lexington, Neshaminy, Southampton, Tradesville, Trevoise, Unionville, Warminster, and Warrington): DELAWARE (North of a line running along State Rt 352 to right on State Rt 291 to State Line); CHESTER (Includes the towns of Aldham, Anselma, Bacton, Berwyn, Cedar Hollow, Charlestown, Chester Springs, Cromby, Devon, Devault, Daylesford, Diamond Rock, Dutton Mill, Frazer, Goshenville, Howellville, Kimberton, Ludwigs Corner, Paoli, Matthews, Perkiomen Junction, Phoenixville, Rapps Corner, Rocky Hill, Strattford, Sugartown, Tanguy, Valley Forge, Valley Store, White Horse, Williams Corner, and Wilsons Corner); MONTGOMERY (Remainder); and PHILADELPHIA COUNTIES

	Rates	Fringes
Ironworkers:.....	\$ 44.70	26.69
Structural and Ornamental		

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IRON0405-001 07/01/2010

BUCKS (Includes the towns of Bensalem, Breadysville, Bristol, Churchville, Cornwell Heights, Davisville, Eddington, Festerville, Hartsville, Johnsville, Line Lexington, Neshaminy, Southampton, Transville, Trevoise, Unionville, Warminster, and Warrington), DELAWARE (North of a line running along State

Route 352 to right on State Route 291 to State Line); CHESTER (Includes the towns of Aldham, Anselma, Bacton, Berwyn, Cedar Hollow, Charlestown Chester Springs, Cromby, Devon, Devault, Daylesford, Diamand Rock, Dutton Mill, Frazer, Goshenville, Howellville, Kimberton, Ludwigs Corner, Paoli, Mathews, Perkiomen Junction, Phoenixville, Rapps Corner, Rocky Hill, Strafford, Sugartown, Tanguy, Valley Forge, Valley Store, White Horse, Williams Corner, and Wilsons Corner); MONTGOMERY (Remainder); AND PHILDELPHIA COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 37.43	24.46
Reinforcing Steel Mesh, Rebar Work		
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IRON0405-003 07/01/2010		

BUCKS COUNTY (Includes the towns of Bensalem, Breadysville, Bristol, Churchville, Cornwells Heights, Davisville, Eddington, Feasterville, Hartsville, Johnsville, Line Lexington, Neshaminy, Southampton, Tradesville, Trevoise, Unionville, Warminster, and Warrington), DELAWARE (North of a line running along State Route 352 to right on Stae Route 291 to State Line); CHESTER (Includes the towns of Alsham, Anselma, Bacton, Berwyn, Cedar Hollow, Charlestown, Chester Springs, Cromby, Devon, Devault, Daylesford, Diamond Rock, Dutton Mill, Frazer, Goshenville, Howellville, Kimberton, Ludwig Corner, Paoli, Mattews, Perkiomen Junction, Phoenixville, Rapps Corner, Rocky Hill, Strafford, Sugartown, Tanguy, Valley Forge, Valley Store, White Horse, Williams Corner); MONTGOMERY (Remainder); and PHILADELPHIA COUNTIES

	Rates	Fringes
IRONWORKER (Rigger and Machinery Mover).....	\$ 35.02	23.35
-----		
IRON0420-007 07/01/2010		

MONTGOMERY COUNTY (Anise, Berguy, Congo, Douglas, East Greenfield, East Limerick, East Slaford, East Zieglerville, Engleville, Fagleysville, Ford, Gilbertsville, Green Lane, Hanover, New Perkisionenville, Niato, Palm, Obelish, Pennsburg, Perkiomen, Pottstown, Royerfored, Roytown, Sammamansville, Tylerport, Upper Hanover, Upper Pottsgrove, Upper Wodall, West Limerick, West Salford, and West Zieglerville Townships)

	Rates	Fringes
Ironworkers:		
Projects \$200,000,000 and greater, all work.....	\$ 29.00	22.00
Projects less than \$200,000,000.....	\$ 28.50	22.00
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IRON0451-004 07/01/2009		

CHESTER (Remainder of County), AND DELAWARE (Remainder of County) COUNTIES

	Rates	Fringes
Ironworkers: (Structural, Ornamental, and Reinforcing).....	\$ 31.60	23.90
-----		
LABO0413-003 05/01/2010		

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 24.95	21.45
GROUP 2.....	\$ 25.15	21.45
GROUP 3.....	\$ 25.15	21.45
GROUP 4.....	\$ 19.75	21.45
GROUP 5.....	\$ 25.80	21.45
GROUP 6.....	\$ 25.85	21.45
GROUP 7.....	\$ 25.70	21.45
GROUP 8.....	\$ 25.45	21.45
GROUP 9.....	\$ 25.30	21.45
GROUP10.....	\$ 25.35	21.45
GROUP11.....	\$ 25.35	21.45
GROUP12.....	\$ 29.08	21.45
GROUP13.....	\$ 25.20	21.45

#### LABORERS CLASSIFICATIONS

GROUP 1: Yardwork Laborers; Scale Mixermen; Bunermen; Feeders; Dustmen

GROUP 2: General Laborer; Asphalt Shovelers; Sheeting, Shoring & Lagging Laborers; Stone, Granite & Artificial Stone Setting Laborer; Hod Carriers; Scaffold Builders; Relief Joints & Approach Slabs; Assembling & Placing Gabions; Pneumatic Tool Laborers; Concrete Forms & Stripping Laborers; Concrete & Lumber Material Laborers; Steel & Steel Mesh (Carrying & Handling); Form Pinners; Mortar Mixers; Pouring & Placing Concrete; Grade Men

GROUP 3: Vibrator Laborer; Finish Surface Asphalt Rackers; Jackhammer Operators; Paving Breaker Operator; Pipelayer & Caulker (all joints up to within 5 feet of the Building Foundation Line); Conduit & Duct Layers

GROUP 4: Flagperson

GROUP 5: Miners

GROUP 6: Burners

GROUP 7: Miner Bore Driver; Blasters; Drillers; Pneumatic Shield Operator

GROUP 8: Form Setters



GROUP 9: Trackmen; Brackmen; Groutmen; Bottom Shaft Men; All Other Laborers in Free Air Tunnels; Underpinning (When an underpinning excavation is dug eight feet or more below the natural grade or where an excavation for a pier hole of five feet square or less and eight feet or more dep is dug, the rate shall apply only after a depth of eight feet is reached, to the men working in the bottom)

GROUP 10: Circular Caissons (Where an excavation for circular caissons are dug eight feet or more below the natural grade level adjacent to the starting point of the caisson hole, at ground level, for the men working in the bottom); Welders, Burners & Air Tuggers

GROUP 11: Powderman; Multiple Wagon Drill Operator

GROUP 12: Toxic/Hazardous Waste Handler

GROUP 13: Wagon Drill/Hydraulic Track Drill Operator

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LABO0413-005 04/01/2009

	Rates	Fringes
Landscaping		
Farm Tractor Driver,		
Hydroseeder Nozzleman,		
Mulcher Nozzleman.....	\$ 18.44	19.25+A

FOOTNOTE:

A. PAID HOLIDAYS: Independence Day, Labor Day, and Thanksgiving Day

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PAIN0021-003 05/01/2010

	Rates	Fringes
Painters:		
Bridge.....	\$ 40.85	20.57
Painters.....	\$ 36.17	20.57

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PLAS0592-008 05/01/2010

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.10	25.46

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PLUM0420-001 05/01/2010

	Rates	Fringes
Steamfitter		
Bucks, Chester, Delaware,		
Montgomery and		
Philadelphia Counties.....	\$ 44.93	26.13

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PLUM0690-008 11/01/2009

	Rates	Fringes
PLUMBER.....	\$ 41.53	24.76

TEAM0470-002 05/01/2009

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 25.25	13.1225+A
GROUP 2.....	\$ 25.35	13.1225+A
GROUP 3.....	\$ 25.60	13.1225+A

#### TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Stake body truck (single axle, dumpster)

GROUP 2 - Dump trucks, tandem and batch trucks, semi-trailers, agitator mixer trucks, and dumpcrete type vehicles, asphalt distributors, farm tractor when used for transportation, stake body truck (tandem)

GROUP 3 - Euclid type, off-highway equipment or belly dump trucks and double hitched equipment, staddle (ross) carrier, low-bed trailers

GROUP 1 - Stake body truck (single axle), dumpster

GROUP 2 - Dumpt trucks, tandem and batch trucks, semi-trailers, agitator mixer trucks, and dumpcrete type vehicles, asphalt distributors, farm tractor when used for transportation, stake body truck (tandem)

GROUP 3 - Euclid type, off-highway equipment or bell dump trucks and double hitched equipment, staddle (ross) carrier, low-bed trailers

#### FOOTNOTE:

A. PAID HOLIDAYS: Memorial Day, Independence Day, Labor Day, Thanksgiving Day and five personal holidays provided employee works at least one day in the three work days before and at least one day in the three work days after the said holiday. Employee earns a personal holiday every two months, provided employee has worked twenty-six day in each consecutive two month period, up to a maximum of five per calendar year. After 130 work days the employee is entitled to all five personal holidays.

B. PAID VACATION: Employee will earn one vacation day for every two months, provided employee has worked twenty-six day in each consecutive two month period, up to a maximum of five vacation days per calendar year. After 130 workdays the employee is entitled to all five days of vacation. Employees with 5 years of seniority, earn an

additional week of vacation, accrued in the same way.

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator

U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

## **APPENDIX I**

### **WIRELESS COMMUNICATION INFRASTRUCTURE INFORMATION**



## RWIS Site Specifications

This specification describes the requirements for the construction of wireless radio structures for the installation of five Radio Weather Information System (RWIS) sites. The Harris design provides RWIS control and monitoring through a wireless backhaul of IP traffic through the high profile sites that connect with the existing Pennsylvania Turnpike Wide Area Network (WAN). The following table shows a list of the sites that require support structures for wireless communications.

**Table A – Site List**

Site Name	Latitude/ Longitude	Site Description
RWIS 10.2 EB	40°50'1.32"N	PA Turnpike RWIS Site with co-located wireless communications tower.
	80°22'0.73"W	
RWIS 48.3 WB	40°31'59.74"N	PA Turnpike RWIS Site with co-located wireless communications tower.
	79°49'15.53"W	
RWIS 197.25 WB	40° 9'29.34"N	PA Turnpike RWIS Site with co-located wireless communications tower.
	77°40'50.38"W	
RWIS 317.55 EB	40° 4'11.50"N	PA Turnpike RWIS Site with co-located wireless communications tower.
	75°34'4.51"W	
RWIS A129.55 SB	41°28'56.86"N	PA Turnpike RWIS Site with co-located wireless communications tower.
	75°41'37.39"W	
Clark Summit Repeater Site	41°28'45.75"N	New Repeater Site.
	75°41'3.50"W	



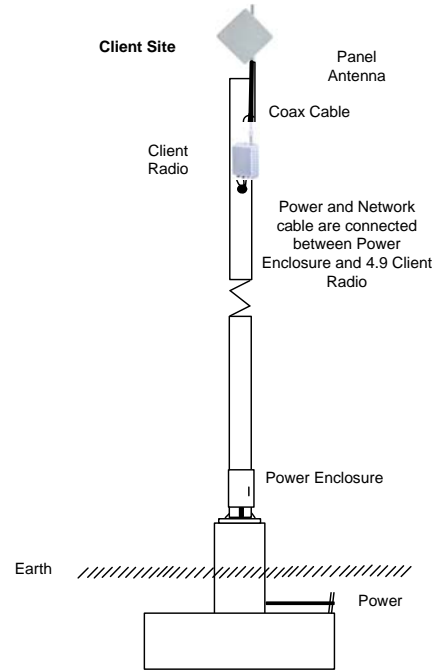
## Scope of Work

The Harris Radio Equipment is installed on two types of sites that require newly constructed roadside pole structures. The RWIS sites are client radio sites. The Repeater sites are Multi-Link radio sites.

For the Client and Multi-Link radio sites, the PA Turnpike Authority shall provide new pole structures to mount radio antennas, radio, and NEMA power enclosures. The structures shall support the antenna mounting location at the specified height in the site list. Harris will install VIDA Broadband Radio Equipment onto these structures to provide wireless communications for the RWIS site. The PA Turnpike shall provide 120 VAC with an acceptable grounding plane and connection at the base of these new structures. Harris is not providing the networking equipment and networking cabling between the Client radio structure and the RWIS tower.

## Client Sites (RWIS Site Location)

The RWIS Sites are equipped with wireless communications by mounting a VIDA Broadband radio antenna at the specified height onto a break-away metal pole. The pole should have at least 30' clearance from the roadway and be able to withstand a wind velocity of 80 MPH with 30% tolerance for wind gusts with a maximum of one foot of sway. At the specified height of each site, an antenna is mounted to the pole structure with pole mounted brackets. An externally rated coaxial line is connected to a VIDA Broadband Client Radio mounted to the structure. At the base of the pole is a NEMA enclosure to support the power and optional networking equipment. These poles will require internal access at the antenna mounting location and at the power supply mounting location to route power, grounding, and Ethernet cables inside the pole structure. The power requirement at this site is 120 VAC accessible at the VIDA Broadband Power Enclosure. Harris is not including battery backup for these sites. Also required at these sites is an electrical halo ground system and connection point that accommodates Client Radios in providing adequate electrical protection in accordance with general practices and local codes. Harris is installing the equipment shown in the following table.



**Figure 1 – Client Site**

**Table B – Client Site Equipment (Harris Provided Material)**

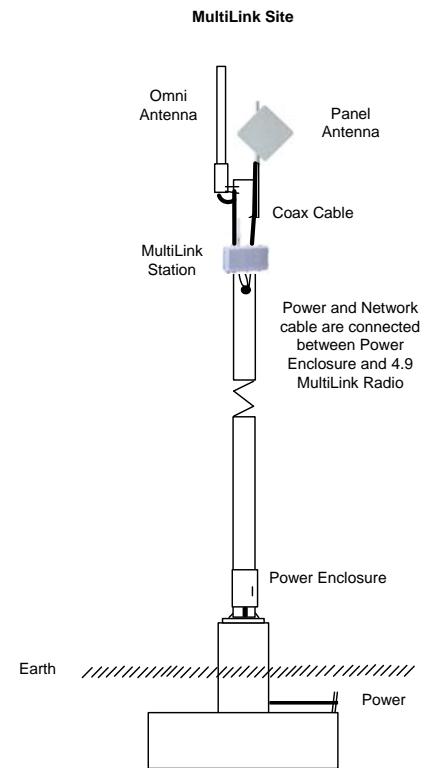
Quantity	Description
1	Client, 4.9 GHz, AC/DC, Copper Ethernet
1	Cable, Power, 2Pin, Sealed
1	Cable, CAT5E, Outdoor, Shielded with Drain
1	Mars,MA-WA49-1X, Antenna, Patch, 10.5deg, 1ft, 21dBi, Type N
1	Mars Antenna Mount - MNT-2
1	F4A-PNMNM-10-USA - 10ft of 1/2" Superflex NM-NM FSJ4-50B Coax Jumper Cable
1	Polyphaser Surge Protector, Coax, Type N, 4.9 GHz
1	Transtector,TSJ 10/100BT, Surge Protector, Cat5E, RJ45, Data
1	FSP 4002MC, Transtector, Surge Protector, DC, Wire, 27VDC
1	Altronix SMP5WP - NEMA 4/IP 65 Rated Outdoor Power Supply/Charger
3	ANDREW 223158-2 - Grounding Kit 1/4" and 3/8" (Greater than 50')



## Radio Repeater Sites

The Radio Repeater Sites are equipped with wireless communications by mounting a VIDA Broadband radio antenna at the specified height onto a break-away metal pole. The pole should have at least 30' clearance from the roadway and be able to withstand a wind velocity of 80 MPH with 30% tolerance for wind gusts with a maximum of one foot of sway.

The repeater structures are equipped with wireless communications by mounting the VIDA Broadband Multi-Link Radios onto these specified pole structures. At the specified height of each site, an antenna is mounted to the pole structure with pole mounted brackets. Two externally rated coaxial lines are connected to a VIDA Broadband Multi-Link Radio mounted to the structure. At the base of the pole is a NEMA enclosure that includes the power equipment and optional network equipment. These poles will require access at the antenna mounting location and at the power supply mounting location to route power, grounding, and Ethernet cables inside the pole structure. The power requirement at this site is 120 VAC accessible at the VIDA Broadband Power Enclosure. Harris is not including battery backup for these sites. Also required at these sites is an electrical halo ground system and connection point that accommodates Multi-Link Radios in providing adequate electrical protection in accordance with general practices and local codes. Harris is installing the equipment shown in the following table.



**Figure 2 – Radio Repeater Site**

**Table C – Multi-Link Sites (Harris Provided Material)**

Quantity	Description
1	Base Station, MultiLink w client 4.9GHz (Repeater Sites extending Coverage)
1	Cable, Power, 2Pin, Sealed
1	Cable, CAT5E, Outdoor, Shielded w/Drain
1	Mars,MA-WA49-1X, Antenna, Patch, 10.5deg, 1ft, 21dBi, Type N
1	Terrawave T49080O10006 - Antenna, Omni,16deg, 8dBi
2	F4A-PNMNM-10-USA - 10ft of 1/2" Superflex NM-NM FSJ4-50B Coax Jumper Cable
2	Polyphaser Surge Protector, Coax, Type N, 4.9 GHz
1	Transtector, TSJ 10/100BT, Surge Protector, Cat5E, RJ45, Data
1	FSP 4002MC, Transtector, Surge Protector, DC, Wire, 27VDC
1	Altronix SMP7WP - NEMA 4/IP 65 Rated Outdoor Power Supply/Charger
3	ANDREW 223158-2 - Grounding Kit 1/4" and 3/8"

## RWIS Site – 10.2 EB

The RWIS site at milepost 10.2 is connected to the PA Turnpike WAN at the PA Turnpike New Castle Exchange tower. There is a direct line of sight without obstructions to the Fresnel zone between these sites at the specified heights. A Client radio is mounted on an existing structure that is co-located with a new RWIS structure. Harris is providing the client radio installation. The structure, power, and grounding are provided by the PA Turnpike.

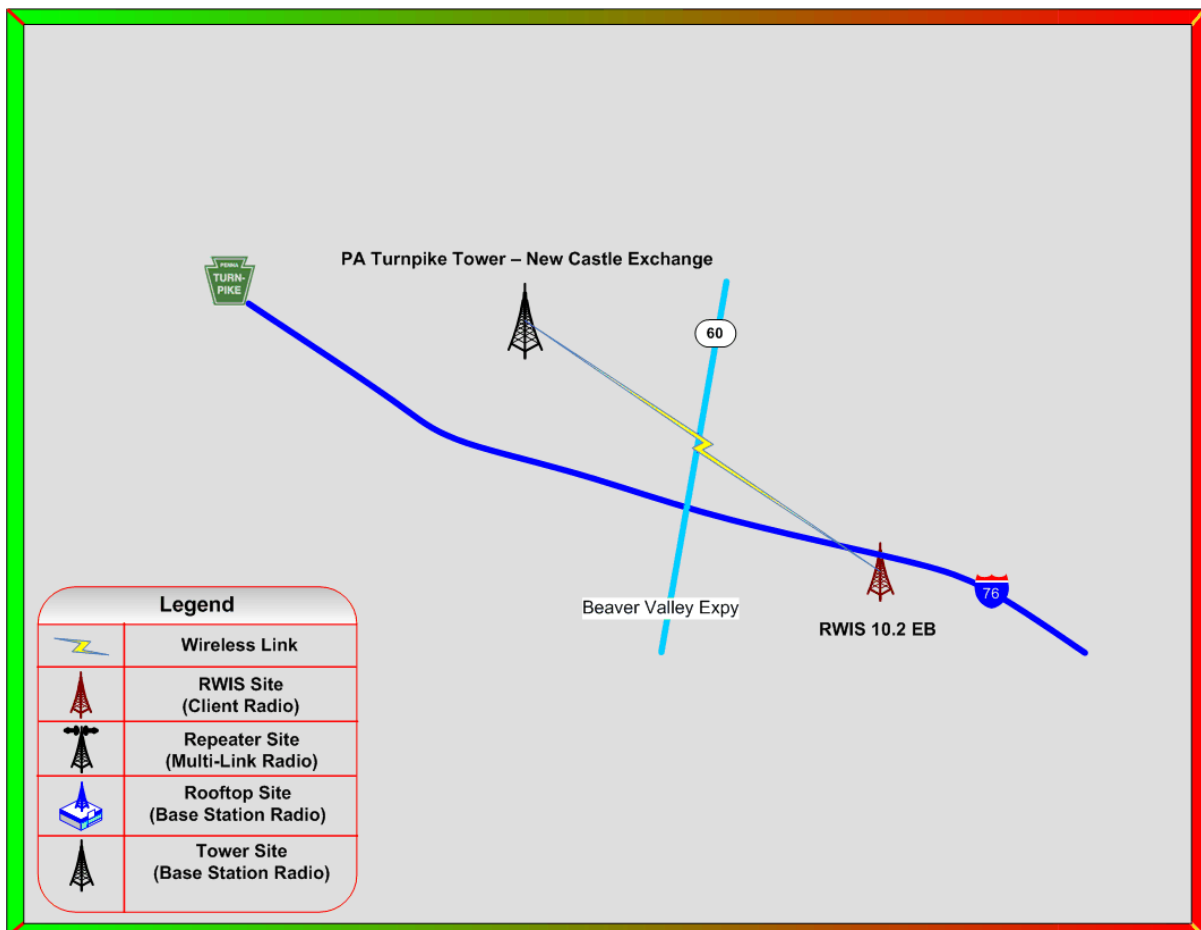


Figure 3 – RWIS 10.2 Wireless Network

## RWIS Site – 48.3 WB

The RWIS site at milepost 48.3 is connected to the PA Turnpike WAN at the PA Turnpike Allegheny Valley Interchange Building. There is a direct line of sight without obstructions to the Fresnel zone between these sites at the specified heights. A Client radio is mounted on an existing structure that is co-located with a new RWIS structure. Harris is providing the client radio installation. The structure, power, and grounding are provided by the PA Turnpike.

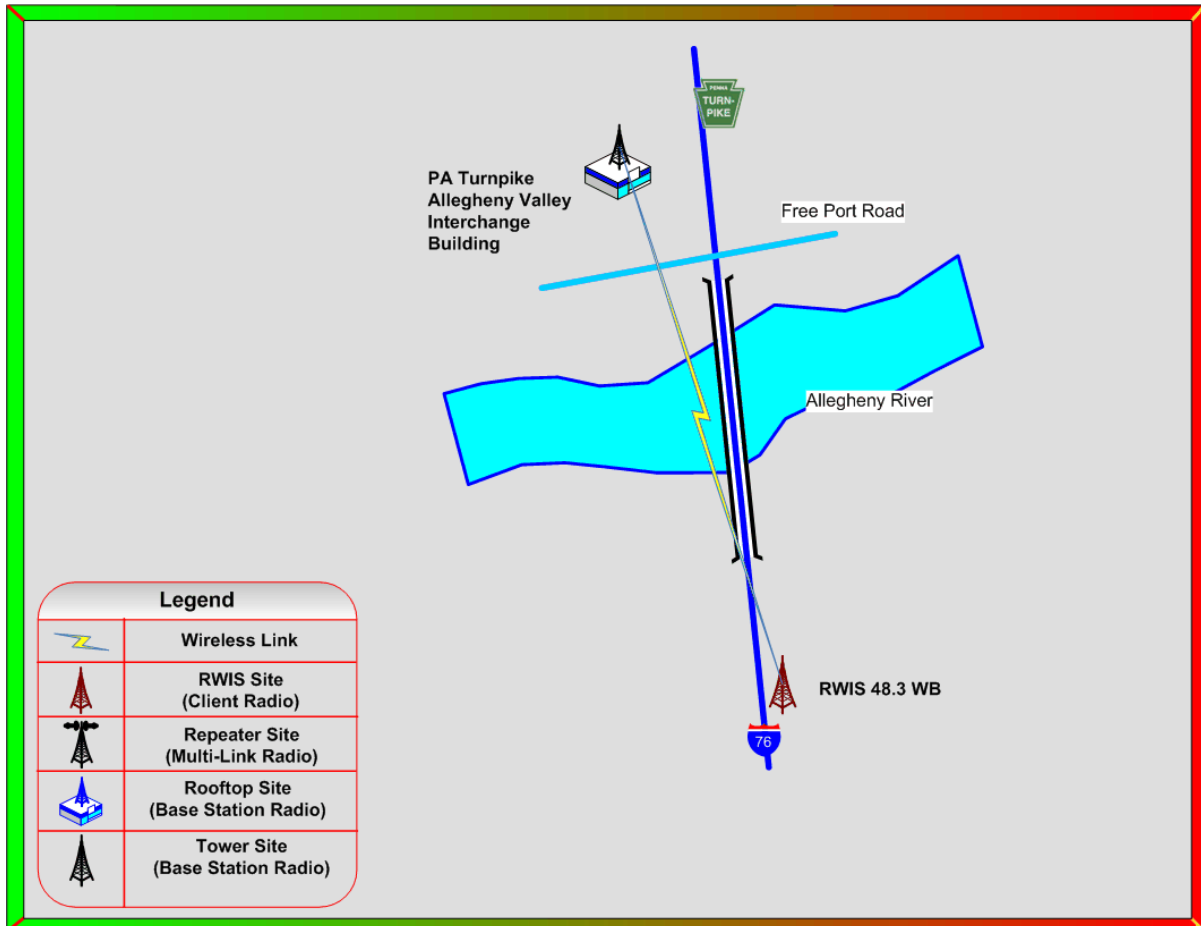


Figure 4 – RWIS 48.3 Wireless Network

## RWIS Site – MP 197.25 WB

The RWIS site at milepost 197.25 is connected to the PA Turnpike WAN at the PA Turnpike Kittatinny Tunnel West Building. There is a direct line of sight without obstructions to the Fresnel zone between these sites at the specified heights. A Client radio is mounted on an existing structure that is co-located with a new RWIS structure. Harris is providing the client radio installation. The structure, power, and grounding are provided by the PA Turnpike.

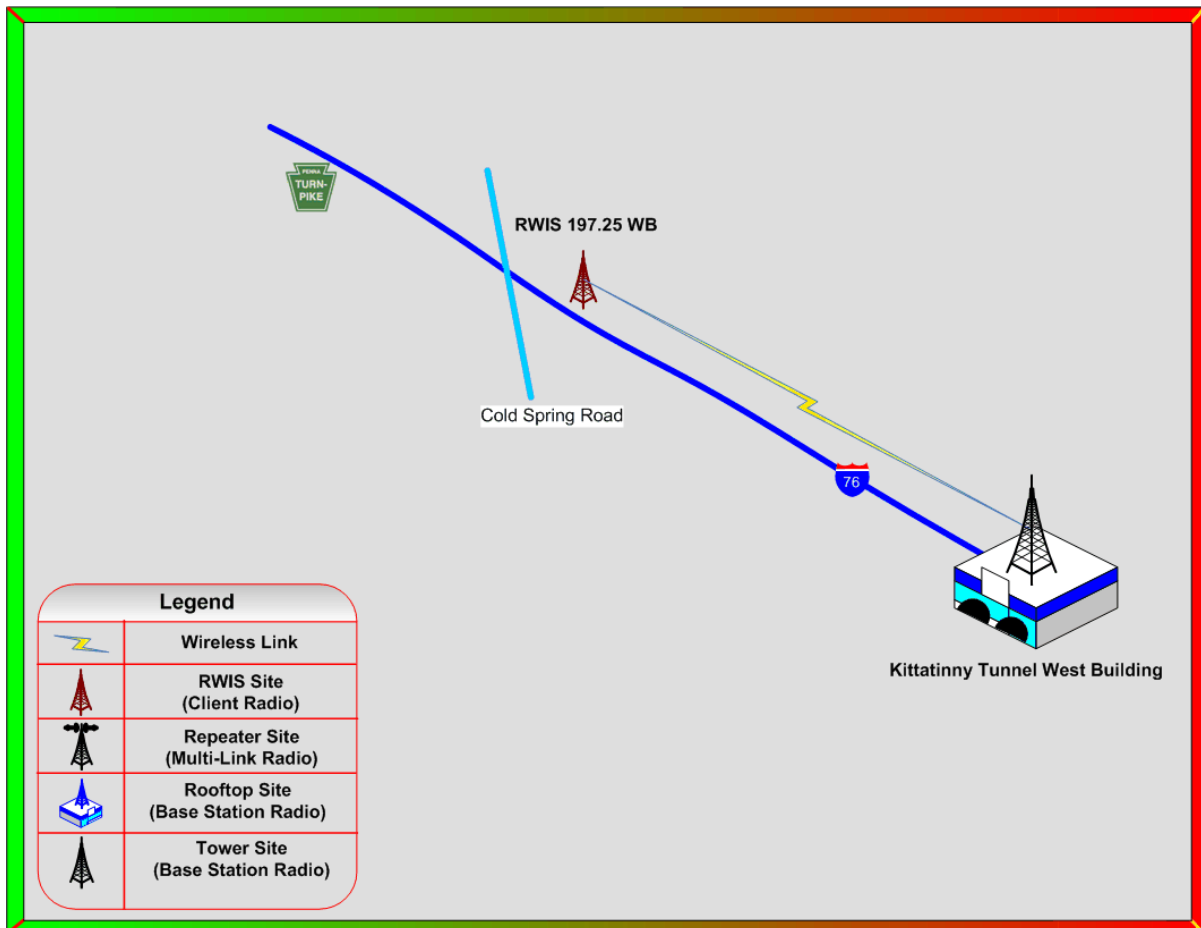


Figure 5 – RWIS 197.25 Wireless Network

## RWIS Site – MP 317.55 EB

The RWIS site at milepost 317.55 is connected to the PA Turnpike WAN at the PA Turnpike Valley Forge Linnville tower. There is a direct line of sight without obstructions to the Fresnel zone between these sites at the specified heights. A Client radio is mounted on an existing structure that is co-located with a new RWIS structure. Harris is providing the client radio installation. The structure, power, and grounding are provided by the PA Turnpike.

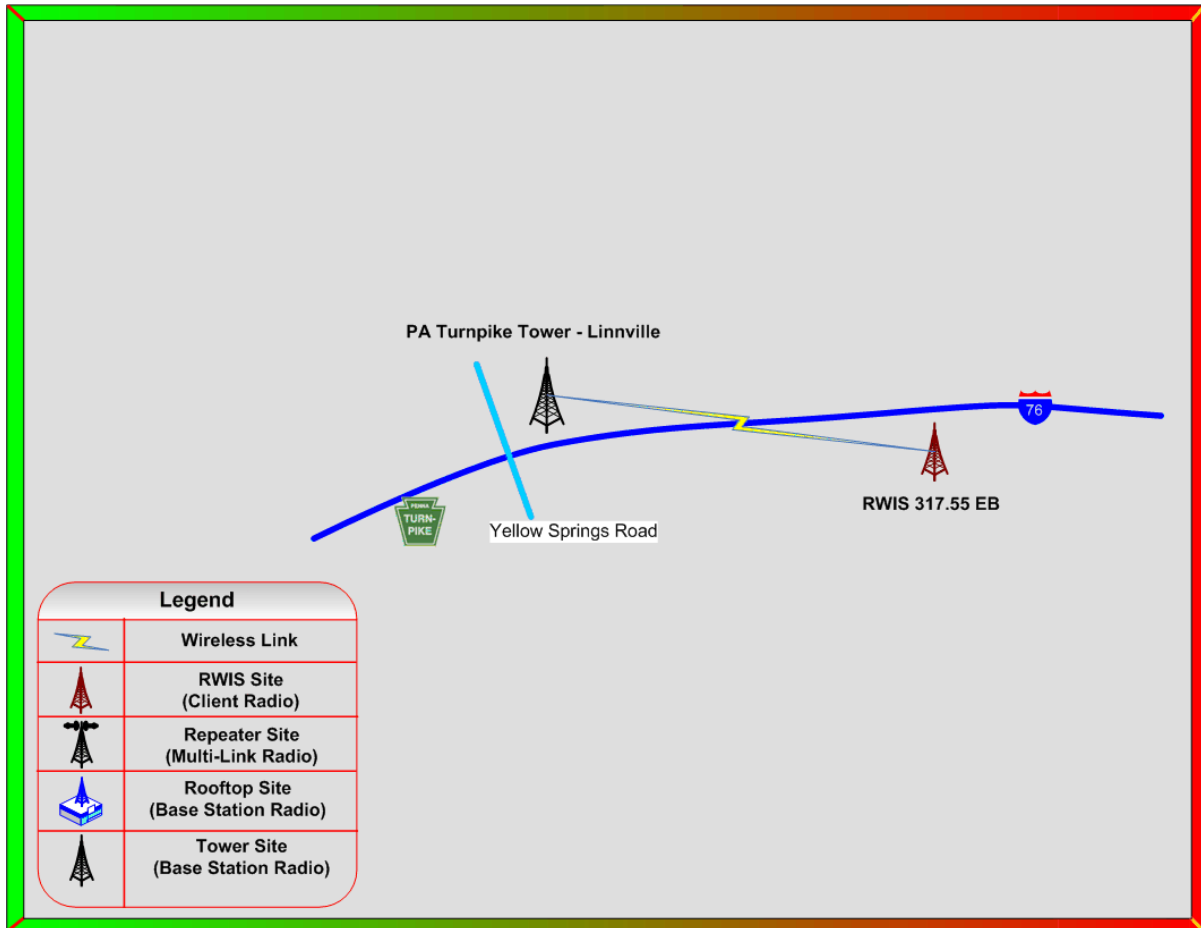


Figure 6 – RWIS 317.55 Wireless Network

## RWIS Site A129.55 SB

The RWIS site at milepost A129.55 is connected to the PA Turnpike WAN at the PA Turnpike Clark Summit Interchange Building through use of a repeater site at the Turnpike on-ramp. There is a direct line of sight without obstructions to the Fresnel zone between these sites at the specified heights. A Client radio is mounted on an existing structure that is co-located with a new RWIS structure. Harris is providing the client radio installation. The structure, power, and grounding are provided by the PA Turnpike. A Multi-Link Client radio is mounted on an existing structure at the location specified. Harris is providing the Multi-Link radio installation. The structure, power, and grounding are provided by the PA Turnpike.

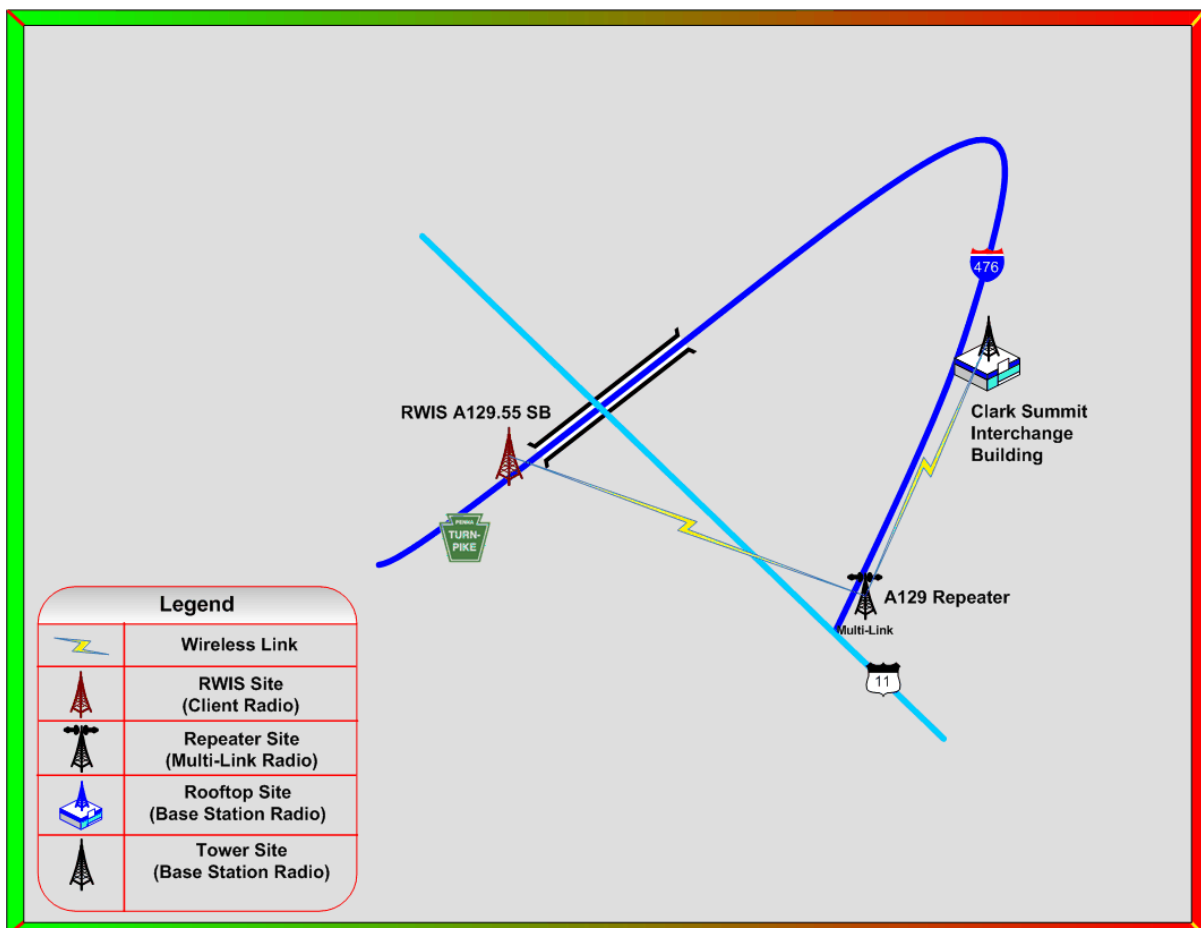


Figure 7 – RWIS A129.55 Wireless Network

# RWIS Site Specification

The following table shows the complete list of sites to support wireless communications to the five RWIS sites. This table specifies the site attributes required to provide wireless communications.

Table D – RWIS Site List

Site Name	Site Type	Latitude (*1)	Longitude (*1)	Minimum Antenna Height AGL (feet) (*2)	Power (*3)	Radio (qty) (*4)	Antenna(s) (*5)	Load (lbs) (*6)	Link (miles)	Site Description
RWIS 10.2 EB	RWIS Site	40°50'1.32"N	80°22'0.73"W	30	120 VAC	Client (1)	MARS MA-WA49-1X	44	0.37	RWIS Site with co-located communications tower.
RWIS 48.3 WB	RWIS Site	40°31'59.74"N	79°49'15.53"W	50	120 VAC	Client (1)	MARS MA-WA49-1X	44	0.6	RWIS Site with co-located communications tower.
RWIS 197.25 WB	RWIS Site	40° 9'29.34"N	77°40'50.38"W	30	120 VAC	Client (1)	MARS MA-WA49-1X	44	0.24	RWIS Site with co-located communications tower.
RWIS 317.55 EB	RWIS Site	40° 4'11.50"N	75°34'4.51"W	30	120 VAC	Client (1)	MARS MA-WA49-1X	44	0.18	RWIS Site with co-located communications tower.
RWIS A129.55 SB	RWIS Site	41°28'56.86"N	75°41'37.39"W	30	120 VAC	Client (1)	MARS MA-WA49-1X	44	0.53	RWIS Site with co-located communications tower.
Clark Summit Repeater Site	Repeater Site	41°28'45.75"N	75°41'3.50"W	60	120 VAC	Multi-Link (1)	MARS MA-WA49-1X & Terrawave T49080O10006 Omni	52	0.38	Repeater Site.

**Site List Assumptions (footnotes\*):**

- \*1. The location is estimated based on the RWIS mile marker. Changes greater than 100' from these locations can change the wireless design.
- \*2. The minimum antenna height specifies the minimum mounting height of the wireless communications antenna.
- \*3. Clean conditioned power and grounding is supplied at the location by the PA Turnpike.
- \*4. The radio specified is the Harris VIDA Broadband Product Line.
- \*5. The antennas specified are subject to a detailed design review.
- \*6. The load is estimated to include the weight of the radio, antenna, mounting hardware, and power supply.



**APPENDIX J**

**SECTION 901**

**MAINTENANCE AND PROTECTION OF TURNPIKE TRAFFIC  
DURING CONSTRUCTION  
SPECIFICATIONS**



## **SECTION 901— MAINTENANCE AND PROTECTION OF TURNPIKE TRAFFIC DURING CONSTRUCTION**

**901.1 DESCRIPTION**—This work is the furnishing, installing, maintaining, and relocating of traffic control devices of Turnpike traffic adjacent to and within the construction area. Perform all work as specified in these Specifications, the Publication 212, the Special Provisions, Standard Drawings, the Maintenance and Protection of Traffic/Traffic Control Plans (TCP), and as directed.

**901.2 MATERIAL**—Furnish material and traffic control devices necessary for maintenance and protection of traffic, and conforming to the TCP, Publication 212, and as follows:

- Temporary Concrete Barrier—Section 627.2
- Temporary Impact Attenuating Devices—Section 696.2
- Reset Temporary Concrete Barrier—Section 628.2
- Reset Temporary Impact Attenuating Devices—Section 697.2
- Painting Traffic Lines and Markings—Section 962.2
- Temporary Pavement Markers – As manufactured by Ennis Paint, Inc.
  - Non-Plowable Raised Pavement Markers - Model No. 88 or approved equal
  - Recessed Reflective Pavement Markers - Model No. 948 or approved equal
- Bituminous Tack Coat—Section 460.2
- Superpave Bituminous Wearing Course—Section 409.2
- Bituminous Wearing Course FJ-1—Section 422.2
- Flat Sheet Signs (for Post Mounted Signs, Type B, C and F and Distance Marker(s)) – Section 1103.04

When traffic line paint and glass beads are provided according to the requirements of Section 901.3(k), furnish certification, as specified in Section 106.03(b)3, that these materials meet specifications.

All temporary traffic control devices must be listed in Bulletin 15 as NCHRP-350 compliant. Temporary Type III barricades must comply with Standard Drawing TC-8716 or be listed in Bulletin 15 as NCHRP-350 compliant.

### **901.3 CONSTRUCTION—**

**(a) General.** Comply with Publication 212.

Furnish, install, maintain, and remove traffic control devices as indicated on the TCP and the Standard Drawings. To accommodate active operations, furnish and maintain all necessary signs and devices. If construction operations, equipment and resultant conditions, including winter shutdown periods and unforeseen conditions, necessitate the use of additional signs, devices and flaggers, furnish and maintain such as are required and to the satisfaction of the Representative. The Representative may revise the TCP in writing during construction. If revisions are made to the TCP by the Representative,

install and maintain any additional warning lights and traffic control signs and devices on necessary mounting devices according to Publication 212, and at locations designated in writing by the Representative. Use PENNDOT approved channelizing devices only. Reflectorize channelizing devices according to Publication 212. Provide safety for the general public and the work crew. Ensure that all equipment approaches, enters, and departs from working zones in the direction of and with the normal adjacent traffic flow. Schedule construction operations to allow movement of traffic through various phases of construction with minimum interference. If traffic interruptions become too frequent, cease operations in the area concerned, as directed. Take remedial action to correct the situation before continuing operations. Remove or cover existing traffic control devices that conflict with the TCP. When the conflict no longer exists, erect or uncover them. The Chief Executive Officer may impose restrictions on the Contractor's operations, including complete suspension, as is necessary to eliminate adverse traffic conditions on the Turnpike without liability for delay.

The Contractor is cautioned that other Commission Contractor(s) and/or Commission Maintenance Personnel may be working adjacent to the work zone(s) during portions of this contract period. The Representative will specify the working sequence of the contracts in order to facilitate coordinated traffic control operations.

If it is necessary to stop traffic, the Pennsylvania State Police Troop T will conduct all traffic stoppages. These stoppages will not exceed fifteen minutes in length. To halt traffic, schedule the stoppage during non-peak hours during the time period indicated in the Special Provisions. For consecutive stoppages, Troop T may stop traffic following the preceding stoppage and after traffic has returned to its normal flow. According to current traffic conditions, Troop T will determine the time duration between stoppages. Troop T may stop traffic only when the weather conditions are satisfactory.

A minimum of 14 days in advance of the scheduled work that will require a traffic stoppage, notify the Representative. The Representative will notify the Pennsylvania State Police Troop T. In addition, provide sufficient flaggers to assist Troop T. These flaggers are subject to the direction and control of Troop T.

Maintain full access to all interchanges, maintenance areas, service plazas, rest areas and access gates. When operations prevent full access to these areas, schedule, arrange, and conduct work in such manner as will provide the least interference to traffic, utilizing the provided access, and to the satisfaction of the Representative. Maintain open traffic lanes in a satisfactory manner. Immediately remove all dirt, spillage or other foreign material deposited on the roadway. Be responsible for any damage caused to passing vehicles or persons. Provide suitable shields or other means to prevent such damage. The Representative's approval of such measures does not relieve the Contractor of the responsibility for damage caused.

Cover all speed limit signs as well as other existing warning and informational signs and retain the covers when such messages are inappropriate for the traffic control pattern used. When work is not being performed and all normal lanes and shoulders are available and at the same elevation for the effected direction(s), cover all work zone signs and turn off all Type A, Type B, and Type C lights associated with these signs. When all normal lanes and shoulders are not available or are not at the same elevation for the effected direction(s), cover all appropriate work zone signs and turn off all Type A, Type B and Type C lights associated with these signs. Uncover signs and turn on all Type A, Type B and Type C lights associated with these signs prior to the resumption of work.

Install and maintain reduced regulatory speed limit signs in work zones, as indicated on the TCP, the Standard Drawings, or as directed. Post mount 55 MPH signs on the right shoulder at ½-mile intervals through the work zone when 40 MPH signs are not warranted and 65 MPH signs, in areas with a normal posted speed limit of 65 MPH, are also not warranted. 40 MPH signs located at the interchange and service plaza acceleration ramps are to be replaced with 55 MPH signs when 40 MPH signs are not warranted and 65 MPH signs, in areas with a normal posted speed limit of 65 MPH, are also not warranted. Existing R2-2-2 signs may be overlaid for 55 MPH in lieu of covering/uncovering signs.

Temporarily remove or cover reduced regulatory speed limit signs when workers are not present, except as otherwise indicated on the TCP, the Standard Drawings, or as directed. Cover or remove 55

MPH signs in areas with a normal posted speed limit of 65 MPH when all normal lanes and shoulders are available and are at the same elevation for the effected direction(s).

Open any substantially completed section of roadway for the use and convenience of traffic, as directed, and as specified in Section 107.15. When work is completed, immediately remove temporary traffic control devices.

Construct and erect all devices in an efficient manner. Maintain, clean, and properly operate the devices during the entire time they are in use. Traffic control devices must meet the acceptable or marginal standards of the Pennsylvania Quality Guidelines for Temporary Traffic Control Devices. Remove all devices when no longer required or not used for a period of two weeks. Where operations are performed in stages, maintain and operate only the necessary devices that apply to the present stage of construction. Store devices off the Turnpike right-of-way until required on the project.

Do not allow weeds, brush, trees, construction equipment, materials, and the like to obscure any traffic control device.

Secure all approved access gates to prevent the unauthorized entry of persons, vehicles and animals. When required, station watchmen at the access gates to provide security. Secure approved access gates with locks when watchmen are not used. Provide locks that will not interfere with the Commission's locking system.

At the completion of the project, remove all signs and devices from the Turnpike right-of-way.

**(b) Maintenance of Roadway and/or Structures.** Treat existing earth roads or improved roads that have been graded, with calcium chloride or by other approved dust control palliatives, as specified in the proposal or as directed.

For the duration of the project, be responsible for repairs, on a 24 hour a day basis, necessary to maintain smooth traffic flow in all available traffic lanes within the limits of the traffic control patterns. These limits start where any traffic control devices begin encroaching on the roadway and end where traffic is returned to its normal lanes. If operations cease during the holiday period or if the Commission suspends construction, the Commission's Maintenance Department will be responsible for maintaining open traffic lanes. Payment for repairs directed by the Representative will be according to Section 110.03.

The Commission reserves the right to enter upon a project and, at its own expense, maintain the existing roadway and/or structures. This maintenance will be during the life of the project, but will not include those items that are the Contractor's responsibility as specified in Section 105.13 for the contract items of work and Section 901.3(e) for the accommodation of local traffic. The Commission does not assume responsibility in any way for maintenance of traffic as a consequence of performing this roadway and/or structure maintenance. If the Commission does not exercise its right to enter upon a project, then the Contractor is to perform routine maintenance of the existing roadway and/or structures that are open to traffic at not additional cost to the Commission.

**(c) Snow Removal and Anti-Skid Material.** The Commission reserves the right to enter upon a project and, at its own expense, remove snow and/or place anti-skid material, considered necessary for continued traffic flow. The Commission does not assume responsibility in any way for maintenance of traffic as a consequence of removing snow or placing anti-skid material.

Remove the anti-skid material, when necessary.

**(d) Employee Parking and Safety.** Turnpike traffic regulations prohibit parking of vehicles on or adjacent to the travel lanes. Employees will not be permitted to park their cars within the Turnpike right-of-way, including interchange areas. Provide off-site parking areas for employee's cars and transport employees between the parking areas and the project in buses or other approved vehicles. In no case will employees be permitted to ride on the outside of any vehicle. Do not discharge passengers from any vehicle within ten feet of any travel lane. Workers are not permitted to cross live traffic lanes except in the interchanges and service plazas.

Turnpike regulations also prohibit U-turns and crossing of travel lanes with vehicles and equipment. Exceptions to these regulations may be granted by the Safety Manager upon receipt of proper written request. The Commission will not permit U-turns at interchanges permitting the use of EZ pass.

Require all persons to wear ANSI/ISEA 107-2004 Class 2 or Class 3 certified high-visibility safety vests or jackets with reflective stripes when working within the Commission's right-of-way or while in work zones adjacent to traffic.

**(e) Local Traffic Maintenance and Safety.** Proceed with the work to ensure safety and the least inconvenience to local traffic. Maintain local traffic ingress and egress by use of existing or new roadways.

Provide and maintain local access to and from the nearest intersecting public road or street, unless otherwise directed. As directed, provide temporary approaches for local vehicular and pedestrian access to and from commuter service, residential, business, industrial, and other public and private facilities.

Also, provide and maintain adequate bridging over base and surface courses, trenches, or other construction, when directed.

**(f) Equipment and Material Storage.** At the end of the workday and whenever practical during the workday, store equipment, vehicles and material a minimum of 12 m (40 feet) from the edge of the nearest open travel lane or store behind existing guide rail and/or concrete barrier using the clearances in RC 54M.

**(g) Tubular Markers.** When indicated, furnish and install tubular markers according to Publication 212.

When directed or as required, replace the complete tubular marker or the tubular marker post only, as the case may be.

When directed or as required, replace the reflective band on the tubular marker.

Remove all tubular markers when no longer necessary for traffic control or as directed.

**(h) Existing Commission Signs.** Remove and temporarily relocate to appropriate locations existing warning, regulatory, guide, and directional signs as required to accommodate construction operations. Do not remove Stop or Yield signs unless an alternate type of traffic control is provided, such as flaggers, temporary traffic signals, etc. Continue the alternate traffic control until the Stop or Yield signs are replaced. Stake or mark sign locations or locate signs on construction drawings before removing any signs. Mark signs with the milepost or station of its existing location along with the offset in m (feet) from the existing centerline. With the exception of Stop or Yield signs as herein noted, permanently reinstall existing warning, regulatory, guide and directional signs at appropriate locations as soon as operations that interfere with the signs are complete. The Contractor is responsible for signs or supports damaged or lost.

**(i) Barricades.** When indicated, furnish and install barricades according to Publication 212.

**(j) Entrances and Exits to Turnpike.** In addition to the existing entrances and exits to the Turnpike, establish all temporary entrances and exits that are deemed necessary and approved in writing by the Representative. In order to meet the rules and regulations of the Commission, the Representative will establish controls for construction, safety, and traffic. Deviations from such rules will not be tolerated and will be sufficient grounds for the withdrawal of the Representative's approval. Upon completion of the Contract, restore the affected areas and appurtenances to their original condition.

**(k) Work Zone Pavement Markings.** The type and location of temporary pavement markings will be indicated on the TCP. Do not open any section of roadway to traffic without proper temporary or permanent pavement markings. Remove conflicting pavement markings prior to changing traffic patterns. Correct any irregular or inaccurate pavement markings as directed by the Representative.

The Contractor is responsible for all temporary pavement markings.

Place standard pavement markings in the same location as covered or destroyed pavement markings, unless otherwise indicated on the TCP or directed.

Be responsible for the maintenance of all work zone pavement markings. Reapply work zone pavement markings prior to winter shutdown, prior to beginning construction in the spring, and every 3 months for each stage of construction.

Be responsible for the removal of all work zone pavement markings as specified in Section 963.3. Remove the temporary painted markings by water blasting or sandblasting. Use only high-pressure water blasting to remove lines on permanent, Superpave surfaces. Temporary painted markings must be entirely removed.

Remove any pavement markings improperly placed and install in the correct location at no additional cost to the Commission.

Do NOT, under any circumstances, apply painted markings to permanent barrier used on the project or on mainline bridge decks with latex concrete surfacing.

**1. Painted Pavement Markings.** Section 962 and as follows:

Paint any temporary markings at half the normal millage used when painting permanent markings, except when reapplying temporary pavement markings prior to winter shutdown use normal millage. Paint the temporary skip line 100 mm (4 in) wide by 3 m (10 ft) long with a 9.1 m (30 ft) space between each temporary skip line. Apply glass beads at the normal rate. Use traffic line paint and glass beads for pavement markings meeting requirements in Publication 212.

**2. Temporary Pavement Markers.** Install markers according to the manufacturer's specifications. Unless otherwise specified below, space markers at 6.1 m (20 ft) centers in transition areas and at 12.2 m (40 ft) centers elsewhere. Markers are to be the same color as adjacent pavement markings. Remove pavement markers that are no longer required or that conflict with traffic patterns being used.

Install markers as shown on the plans and according to the following requirements:

- Mainline bridges with latex surfacing. Use temporary non-plowable raised pavement markers for all temporary pavement markings required on the bridge decks.
- Roadway Pavement. Install temporary non-plowable raised pavement markers in addition to pavement markings along the centerline of narrowed or shifted travel lanes and along the right edgeline of shifted travel lanes.
- Median Reconstruction. On final roadway pavement surface, install temporary yellow non-plowable raised pavement markers on the pavement adjacent to the permanent concrete median barrier in temporary position at the midpoint of each permanent concrete median barrier section.
- Markings required between March 1 and November 30 - Install non-plowable raised pavement markers.
- Markings required between December 1 and February 29 – Install non-plowable raised pavement markers on final surfaces only. Install recessed reflective pavement markers on non-final surfaces only. Install as shown on the Standard Drawings, as recommended by the manufacturer, as directed by the Representative and as follows:

Perform a test section prior to performing any work and at any time as directed by the Representative. Select a location for the test in an area agreed to by the Representative. Perform

the test section to ensure that the machine is capable of cutting RRPM slots as shown on the Standard Drawings.

Install the recessed pavement markers by cutting a slot in the pavement as shown on the Standard Drawings. Ensure that the slot is wide enough for the marker to fit freely into the slot and deep enough to allow for epoxy adhesive. Ensure that the top of the installed marker is flush with the pavement surface or no more than 1.6 mm (1/16-inch) below the pavement surface.

Bond the marker in the slot with an acceptable epoxy adhesive in such a manner as specified and recommended by the manufacturer and as approved by the Representative.

Prior to opening the lane to traffic, remove and dispose of all milled debris as required.

- Remove temporary non-plowable raised pavement markers prior to November 30 and replace, if required, with temporary recessed reflective pavement markers. If a stage change occurs between October 1 and March 1, temporary recessed reflective pavement markers may be installed on non-final surfaces only in lieu of the temporary non-plowable raised pavement markers for the duration of the stage at no additional cost to the Commission, as approved by the Representative.

**3. Temporary Concrete Barrier Delineation.** Install delineators of an approved type listed in Bulletin 15. Delineators are to be the same color as adjacent pavement markings.

**(I) Portable Road Light and Power Unit.** Use portable road light and power units to illuminate all crossovers at night and to illuminate work zones during nighttime work hours. Do not locate lighting fixtures to produce distracting or blinding glare for the driver. Provide units meeting the following minimum requirements:

**1. Illumination.**

- Lamp - 250 watt, high-pressure sodium.
- Distribution - IES Type V.
- Mounting Height - 7.6 m (25 feet).
- Design and construct refractor from unbreakable material and to reduce specified light distribution without causing glare to motorists.

**2. Power Unit.** Self-contained power generation unit satisfactory to the Representative.

**3. Assembly.** Mount lamps on telescoping pole or tower with T-bar support for three lamps capable of being operated separately or together by individual control. Mount lamps on T-bar assembly to enable positioning lamps at any location within 180 degrees of horizontal. Mount entire power-pole unit on trailer capable of being towed. Secure unit to trailer by mechanical attachment affixed to trailer so that unit cannot be raised inadvertently while being towed. Equip trailer unit with rubber tires and automotive wheels. Equip trailer with standard attachment tow-bar assembly with safety chain and Pennsylvania approved taillights and directional signals. Stabilize for wind conditions in excess of 105 km/h (65 MPH). Provide electric wiring, cable, connection, etc., according to type approved for automotive use and meeting the requirements of the latest National Electric Code and the Commonwealth of Pennsylvania.

**4. Alternate Power Supply.** Make provisions for quiet zone operation from alternate power supply or commercial service.

**5. Acceptance.** Obtain the Representative's approval of each unit prior to use on the project.

Alternate construction lighting may be used to illuminate work zones during nighttime work hours. The Commission has pre-approved an alternate that meets the following requirements:

- Multi-Directional Lighting Device (MDLD) units which can self-inflate and are capable of illuminating approximately 1,400 m<sup>2</sup> (15,000 ft<sup>2</sup>).
- MDLD units 1.1 m (3.5 ft.) horizontal diameter and capable of withstanding 100 km/h (60 mph) winds.
- MDLD units with halogen bulbs recommended by the manufacturer.

Furnish, maintain, and operate sufficient number of units to properly illuminate work zones and/or provide proper lighting of all crossovers. Repair or replace damaged lighting units and bulbs within 24 hours.

**(m) Construction Vehicles and Equipment.** Identify all vehicles, cars and trucks used on the project and which travel the open lanes of traffic with a magnetically attached sign, or approved equal sign, prominently positioned on the rear of the vehicle. Attach signs to vehicles whenever traveling open traffic lanes. Provide signs of sufficient size to display the legend in letter size and arrangement that is easily read at a distance of 61 m (200 feet) in normal daylight. Provide black legend on orange Type VII reflectorized material arranged as follows:

CONSTRUCTION VEHICLE  
KEEP ALERT FOR  
SUDDEN STOPS AND TURNS

Obtain the Representative's approval prior to using the signs on the project. Keep signs clean and in good repair at all times to the satisfaction of the Representative. Ensure that all equipment approaches, enters, and departs from working zones in the direction of the adjacent traffic flow. Furnish all equipment and vehicles working adjacent to traffic with a yellow flashing light attached to the equipment adjacent to and facing the traffic and which is visible 360 degrees. Provide lights meeting the following requirements:

**1. Description.** Operate light from a nominal 12 volt DC power source. Provide amber lens and lamps that rotate 360 degrees. Furnish housing to provide rigid support to the lamp, motor and drive train.

**2. Minimum Dimensions.** Height 191 mm (7.25 in); Diameter 216 mm (8.5 in).

**3. Lamps.** Consisting of two Par 36 Sealed Beam Incandescent Lamps to provide 3500 beam candlepower. Provide sealed beam lamps that produce approximately 80 flashes per minute when rotating.

**4. Construction.** Provide reinforced thermoplastic lamp holder. Use spring clips to hold lamp in holder and make electrical connection to the lamp when properly placed in holder. Screw terminals or spade connections to the lamp are unacceptable.

**5. Motor.** Provide a permanently lubricated, high torque, permanent magnet type operating from nominal 12 volt DC, filtered to reduce radio frequency interference.

**6. Drive Train.** Utilize a gear assembly with the worm-gear being part of the motor armature. Incorporate in the drive chain a slip clutch arrangement to prevent motor damage. RUBBER BANDS OR FRICTION DRIVE UNITS ARE UNACCEPTABLE.

**7. Lens Retainer.** Fabricated from stainless steel with a nut and bolt fastener. Luggage clamp type fasteners are acceptable.

**8. Mounting.** Provide unit capable of being surface mounted or on a self-leveling mount. Provide all mounting hardware including 14-gauge wire, 7.3 m (24 feet) in length with an in-line fuse, switch-rocker type (lighted), and roof mounting bolts. Provide a rubber or neoprene gasket or mounting pad to form a weatherproof seal between housing and vehicle roof.

**9. Reference.** Arrow Model 530, Modified (99005); Federal Model 14, Modified; Dietz Model 7-40004; or approved equal. Strobe type lights that meet the dimension, candlepower, flash, lens and retainer and mounting requirements will be acceptable.

**(n) Sign Identification and Covers.** Provide identification and a telephone number for 24-hour contact on the back of each traffic control sign. This information is to be available to Turnpike personnel for emergency purposes. Furnish a sticker indicating the manufacturer of each traffic control sign.

Cover existing signs and traffic control signs that conflict with the TCP or that do not apply to existing conditions. Cover with rubber roofing material (EPDM) having a thickness of 1.1 mm (0.045 inch) or any other approved material, to cover the entire sign. Burlap or similar open mesh materials are unacceptable. Stabilize and fasten this material to the sign with either plastic or wood to prevent any movement. Do not apply tape to the face of the sign. Do not deface or damage the sign face using this procedure. Maintain sign cover retainers in good condition. Remove signs not required or not used for a period of two weeks. Store signs off the Turnpike right-of-way until required on the project.

**(o) Median Mile Markers.** When mile markers are removed from the median due to construction, place the markers on the shoulders. At all times, ensure that the customers can see the mile markers. Place even-numbered mile markers on the eastbound and northbound shoulder. Place odd-numbered mile markers on the westbound and southbound shoulder.

**(p) Inspections and Patrols.** Perform routine inspection of traffic control elements during each work shift. Assign responsibility for safety and traffic control to a representative(s) trained in the principles of safe traffic control during each work shift. This individual(s) will ensure that all traffic control measures implemented on the project are necessary, conform to the TCP, and are effective in providing safe conditions for motorists and workers. If modifications to traffic control or working conditions are required to satisfy these requirements, this representative(s) will have the authority to modify conditions or stop the work until a safe condition is provided. Submit the name and qualifications of this individual(s) for acceptance by the Commission.

Assign personnel with vehicles to patrol the project, its approaches and other affected roadways. Provide patrol personnel with vehicles equipped with a 360-degree emergency warning light as specified in Section 901.3(m). Equip vehicles with four-way flashing warning lights, visible from front and rear to be used when the vehicle is stopped. Assign sufficient patrol personnel to provide for all necessary maintenance, repair or replacement of signs and devices. The patrol personnel are responsible to insure all access gates are locked or secured and to report accidents involving damaged traffic control devices to the Commission's Operations Center.

Report any adverse traffic conditions to the Operations Center who will notify the Pennsylvania State Police Troop T. Remain at the scene until Troop T arrives. Take all reasonable steps to abate the adverse traffic conditions and take necessary precautions to warn other customers of the condition. Upon arrival of Troop T, cooperate with Troop T to control traffic. At no time is the Contractor relieved of the responsibility for the maintenance and protection of traffic.

Patrol personnel are to report to the Operations Center traffic accidents involving customers and construction employees, equipment or vehicles. The Operations Center will notify Troop T. Report to



the designated safety officer industrial-type accidents involving construction personnel. Notify the Representative of all accidents occurring within the project, its approaches or on other affected roadways.

Provide 24 hour patrols when less than two 3.3 m (11 ft) lanes, three 3.3 m (11 ft) lanes in 3-lane sections, in either direction are available during non-working hours. Provide 24 hour patrols when normal ramp lanes and ramp widths are unavailable during non-working hours.

**(q) Temporary Concrete Barrier.** Except for temporary pavement markings, temporary concrete barrier is not to be painted.

Provide, install and maintain top-mounted and side-mounted delineators on temporary concrete barriers, glare screen and bridge barrier as indicated on the TCP.

Clean or replace all delineators as directed. Clean in an approved method.

**(r) Flaggers.** Provide flaggers at all sites where construction equipment and vehicles cross or have access to the travel lanes. The flaggers are responsible to regulate the entry and departure of the construction equipment and vehicles.

**(s) Lifting of Construction Materials.** Stop traffic during the placement or removal of any construction materials that are above open lanes to traffic, such as, but not limited to, lifting equipment, bridge components, signs, and overhead sign structure components as directed.

**(t) Non-Compliance of Maintenance and Protection of Traffic.** Liquidated damages will be assessed in the event of non-compliance with Maintenance and Protection of Traffic requirements. Liquidated damages will be assessed following notification by the Inspector-in-Charge.

If the Contractor remains in violation of the Maintenance and Protection of Traffic provisions, the Assistant Chief Engineer – Construction may direct Commission Maintenance Personnel to correct the deficiencies. In such cases, the Contractor will be charged for labor, equipment, and material costs incurred by the Commission.

**(u) Arrow Panels.** Provide units from an approved source with panels a minimum of 1220 mm (48 in) high and 2440 mm (96 in) wide with non-reflective, flat black finish. Use a 12-volt battery pack to supply electrical power to the sign panel for a minimum of 72 continuous hours. Solar powered arrow panels listed in Bulletin 15 are acceptable. Operation from alternate electric power supply or commercial electric service may be used with the approval of the Representative.

The number of units required will be indicated in the bid proposal for the project. The Contractor may furnish additional units at no additional cost to the Commission.

**(v) Shadow Vehicle with Truck Mounted Attenuator (TMA).** Provide a shadow vehicle that meets the requirements of Publication 212. Provide documentation to the Representative that the requirements for the shadow vehicle are met. To the rear of the shadow vehicle, attach a Truck Mounted Attenuator (TMA) provided from an approved source and tested and approved for NCHRP 350 Test Level 3 Criteria. In the bed of the shadow vehicle, insert a Skid-Mounted Arrow Panel (from an approved source) that measures a minimum of 1220 mm (48 in) high by 2440 mm (96 in) wide. In conjunction with the use of the Shadow Vehicle, provide and use a PENNDOT approved Traffic Alert Radio that is capable of being carried by the Shadow Vehicle.

To provide advance information to approaching drivers and to separate the workers and work vehicles from approaching drivers, position the shadow vehicle in advance of work locations which are not separated from approaching drivers by concrete barrier. Assign operator(s) to each Shadow Vehicle with TMA. Provide a means for the operator(s) to verbally communicate with the operation for which the Shadow Vehicle with TMA is being used. The operator(s) must be available at all times to position and/or relocate the shadow vehicle. During periods of multiple work locations, prioritize the use of the shadow vehicle based on the priority chart provided.

**1. Stationary Operation.** When separating a stationary operation (i.e.: stopped for more than fifteen minutes) from approaching drivers, the shadow vehicle with TMA is to be unoccupied.

**2. Slow-Moving or Moving Operation.** When separating approaching drivers from an operation that will be moving continuously or intermittently where the vehicle will not be stopped at any single location for more than fifteen minutes, the operator is to be the only occupant of the vehicle.

**3. Position.** Position all shadow vehicles so they are visible to approaching vehicles from a distance calculated as follows:

$$\text{Speed Limit (km/h or mph)} \times 10 = \text{Sight Distance (m or feet)}$$

If this sight distance can not be obtained, use the maximum sight distance which the local geometry of the road allows. Orient all shadow vehicles so that the rear of the vehicle (and the TMA) is perpendicular to and facing oncoming traffic.

#### **4. Priorities for the Application of Shadow Vehicles.**

<u>Closure / Exposure Condition</u>	<u>Priority</u>
<u>No Formal Lane Closure</u>	
a) Shadow Vehicle for Operation Involving Exposed Personnel	1a
b) Shadow Vehicle for Operation Not Involving Exposed Personnel	1b
<u>No Formal Shoulder Closure</u>	
a) Shadow Vehicle for Operation Involving Exposed Personnel	2a
b) Shadow Vehicle for Operation Not Involving Exposed Personnel	2b
<u>Formal Lane Closure</u>	
a) Shadow Vehicle for Operation Involving Exposed Personnel	3a
b) Shadow Vehicle for Operation Not Involving Exposed Personnel	3b
<u>Formal Shoulder Closure</u>	
a) Shadow Vehicle for Operation Involving Exposed Personnel	4a
b) Shadow Vehicle for Operation Not Involving Exposed Personnel	4b

The number of units required for the payment type indicated will be shown in the bid proposal for the project. The Contractor may furnish additional units for the payment type indicated at no additional cost

to the Commission. In addition, the Contractor may furnish additional shadow vehicles with TMA regardless of the payment type indicated at no additional cost to the Commission.

**(w) Portable Changeable Message Signs.** From a PENNDOT approved source, provide units that can display a three-line message. A minimum of one week prior to lane closures, stoppages, or traffic paces, place these signs on the shoulders to inform customers of upcoming construction work. The Representative will determine the sign locations and approve messages. Based on traffic conditions and as directed by the Representative, relocate the signs at no additional cost.

Within 24 hours of being notified that a sign is damaged or inoperative, repair or replace the sign to the satisfaction of the Representative. If the sign remains unrepaired beyond the 24-hour limit, the Contractor will be assessed \$500.00 per day in liquidated damages.

The number of units required will be indicated in the bid proposal for the project. The Contractor may furnish additional units at no additional cost to the Commission.

**(x) Emergency Contact.** Designate a responsible individual(s) to be in charge of all safety including the maintenance and protection of traffic. Designate an individual(s) that can be contacted at all times (day or night) and who is authorized to make necessary decisions. Furnish the name(s), address and telephone number of the designated individual(s) for 24-hour availability.

#### **901.4 MEASUREMENT AND PAYMENT—**

**(a) Maintenance and Protection of Turnpike Traffic During Construction.** Lump Sum

The Commission will measure and pay for this item in a proportionate manner, one designated by the Commission, on the basis of current estimates.

With the exception of the separate pay items specified in Section 901.4(b), if an item or device is required for maintenance and protection of traffic, the cost of the item or device is incidental to Item 2901-0001.

**(b) Separate Pay Items.** The Commission will separately measure and pay for the following items or devices, when indicated or required or as directed by the Representative for maintenance and protection of traffic during construction:

- Arrow Panel—Each
- Calcium Chloride-Ton
- Other Dust Control Palliatives-Gallon or Ton
- Tubular Markers—Each
- Replace Tubular Markers-Each
- Replace Tubular Markers, Post Only-Each
- Replace Reflective Band on Tubular Marker-Each
- Remove Tubular Markers-Each
- Changeable Message Sign—Each

- Temporary Concrete Barrier—Section 627.4
- Reset Temporary Concrete Barrier—Section 628.4
- Pavement Marking Removal—Section 963.4
- Painting Traffic Lines and Markings—Section 962.4
- Temporary Non-Plowable Raised Pavement Markers, Yellow—Each
- Temporary Non-Plowable Raised Pavement Markers, White-Each
- Temporary Recessed Reflective Pavement Markers, Yellow-Each
- Temporary Recessed Reflective Pavement Markers, White-Each
- Temporary Bituminous Rumble Strips—Square Meter (Square Yard)
- Temporary Impact Attenuating Devices—Section 696.4
- Reset Temporary Impact Attenuating Devices—Section 697.4
- Standard Pavement Markings, Paint & Beads, for the type indicated—Meter (Linear Foot)
- Shadow Vehicle with Truck Mounted Attenuator (TMA)- One of the following:
  - a) Each.
  - b) Day. A day is defined as approved usage of any duration within a 24-hour calendar day period.
  - c) Hour. Measured beginning when the Shadow Vehicle with TMA is properly positioned in advance of the work location to the time when the Shadow Vehicle with TMA is removed from in advance of the work location rounded to the nearest whole hour.

## **Addendum No. 1**

**RFP # 10-40110-2744**

**Installation of Intelligent Transportation Systems between Milepost 10.2 and Milepost 317.5; Milepost A57.4 and Milepost A129.5 in Beaver, Allegheny, Cumberland, Dauphin, Chester, Lehigh, Luzerne, Wyoming Counties, Pennsylvania**

**Prospective Respondents: You are hereby notified of the following information in regard to the referenced RFP:**

### **REVISIONS**

1. Page 3 of 20, Part I-13, 2<sup>nd</sup> sentence, add the words “of text” after 30 pages.
2. Page 6 of 20, Part I-25, delete the last sentence of first paragraph and all bulleted references.
3. Page 7 of 20, Part I-25, delete second section and all bulleted references.
4. Page 7 of 20, Part I-26, delete “Appendix C” in the fifth line.
5. Page 9 of 20, Part II-4, revise the first sentence to the following:

The PROPOSER must be Penn DOT prequalified (P1, P2 and P3) for ITS construction and integration, or provide substantial backup to demonstrate their (personnel and previous work experience) ability to complete this project.
6. Page 13 of 20, Part III-3, revise the order of relative importance from highest to the lowest to:
  - a. Proposer Qualifications
  - b. Soundness of Approach
  - c. Personnel Qualifications
  - d. Cost
  - e. Understanding the Problem
  - f. DBE/MBE/WBE Participation
7. Page 14 of 20, Part IV-1, 4<sup>th</sup> sentence revises Publication 203 to 212.
8. Page 14 of 20, Part IV-2, 2<sup>nd</sup> sentence revise 512 miles to 532 miles. Same part revises the last sentence to read “The system will have the capacity to include future expansion”.

9. Page A1 of A31, Appendix A, fourth bullet, revise Daniel Buckley's telephone # to 978-905-3072 and e-mail address to [daniel.buckley@harris.com](mailto:daniel.buckley@harris.com). Same page, 6<sup>th</sup> bullet, delete the 2<sup>nd</sup> and 3<sup>rd</sup> sentences.
10. Page A4 of A31, Appendix A, delete the 5<sup>th</sup> full paragraph starting with "No work" and add the following: Cooperate with all facility owners in the protection, placement, replacement, relocation, adjustment, or reconstruction of their structures and facilities during construction. Contact all facility owner representatives at least 15 working days prior to starting construction, and all affected utilities at least 3 weeks in advance of any required facility movements or as identified in the following description, in order to schedule and coordinate operations.
11. Page A8 of A31, Appendix A, last full sentence, add the following after Publication 408/2007-7: "with the exception of section 901, see Appendix J Maintenance and Protection of Turnpike Traffic During Construction, Commission Specification 901".
12. Page A10 of A31, Appendix A, paragraph A.3, revise contact information in accordance with revision number 9.
13. Page B13 of B13, Appendix B, delete the last sentence on the page that starts with "The cut".
14. Page C1 of C2, Appendix C, delete all specification sections labeled as SPECIAL.
15. Page D2 of D19, Appendix D, section C.1, 2<sup>nd</sup> sentence revised to read: The Commission and its representatives will perform a thorough design review. The PROPOSER shall submit the plan set a minimum of 21 days prior to the scheduled field review date. All comments provided by the Commission or its representatives must be fully incorporated into the plan set prior to the start of the field view.
16. Page D3 of D19, Appendix D, section D.5, add the following to the end of the paragraph: and provide verification that the system is functional. Re-testing, due to equipment failure, or due to PROPOSER delay, will not be at the expense of the Commission. The PROPOSER shall be required to pay for all expenses, including meals and transportation of any of the Commission testing personnel, and up to one (1) of their assignee's during system re-testing, until the testing is completed.
17. Page D4 of D19, Appendix D, section F, delete (if applicable).

18. Page D4 of D19, Appendix D, section F.3, add the following to the end of the paragraph: requirements of these specifications and that the optical properties of the cable have not been impaired by the installation.
19. Page D5 of D19, Appendix D, section F.9.e, add the following to the end of section e: over the time from CTS until data is sent, the timeout, number of sync characters, or re-transmit criteria.
20. Page D6 of D19, Appendix D, section G.3, add the following to the end of the section: be continuously monitored with daily reports generated to confirm proper integration with the software. Correct, as determined by the Commission, any failure or malfunction of material significance during the test period. Said malfunctions include, but are not to be limited to, equipment failure or failure of the system or any subsystem to comply with the requirements stipulated in the contract. A failure that requires correction before proceeding with the testing is defined as any failure of any item of the equipment or software, or both, that prevents the Commission operating staff from performing meaningful use of the system or any subsystem.
21. Page 10, Appendix I, RWIS site A129.55SB, starting from 5<sup>th</sup> sentence, revise as follows: The power and grounding are provided by the PA Turnpike. A Multi-Link Client radio is mounted on a structure at the location specified. Harris is providing the Multi-Link radio installation. The furnishing and installation of the repeater structure is the responsibility of the contractor.

## **ADDITIONS**

1. Design and install guide rail for RWIS located at milepost 10.2, 48.3, A57.4 and A94.85. Locate RWIS so that the sensors operate to an optimum efficiency. Guide rail may be designed placing it with an offset from the back edge of shoulder.
2. Additional information related to Table1, Page 17 of 20 as follows:  
Milepost 245.70 – connection to an existing onsite fiber trunk will need to be made. Milepost A57.4 – conduit, fiber, and cable for power and communications will be required at this site. The connection can be made through the infield, back to the Lehigh Valley Interchange recording building where a WAN and power connection can be made. Milepost A94.85 – same as A57.4 only connection will be made in the Miller building at the Pocono Maintenance building.

## **QUESTIONS and ANSWERS**

Following are the answers to questions submitted in response to the above referenced RFP as of October 7, 2010. All of the questions have been listed verbatim, as received by the Pennsylvania Turnpike Commission.

1.     **Question:**  
Will guiderail be required to protect the Roadway Weather Information System (RWIS) devices at Mile Post (MP) 10.2, MP A57.4, A94.85, and the repeater site if they are located outside of the clear zone?  
**Answer:**  
**Refer to Additions #1 for the first part. If the repeater is located inside the clear zone then guide will need to be designed and installed.**
2.     **Question:**  
Is a separate pole required for mounting the radio equipment or can it be attached to the RWIS structure if it meets the deflection criteria?  
**Answer:**  
**Yes, each location with the exception of the fiber connected location will have a separate pole for mounting radio communications equipment. No it will not be mounted to the RWIS sensor pole.**
3.     **Question:**  
The GPS point at MP A94.85 places the RWIS in the middle of the roadway. On the southbound side of the Northeast Extension at this point, there is a slight slope. Will The Pennsylvania Turnpike Commission (PTC) provide a revised GPS pint for this location?  
**Answer:**  
**The RWIS at A94.85 is located in the gore area, southbound exit ramp at Pocono Interchange.**
4.     **Question:**  
Will the PTC allow dielectric fiber and power cables to be pulled through the same junction box?  
**Answer:**  
**The conduit and cabling may be in the same trench; however there will be separate junction boxes for communications and power.**
5.     **Question:**  
Can the high mast lighting conduit be used to pull the power to the RWIS?  
**Answer:**  
**No**



6. **Question:**  
Is the Clark Summit repeater site located on Turnpike Rights of Way (ROW) or will coordination with other agencies be required?  
**Answer:**  
**The repeater is on Turnpike ROW.**
7. **Question:**  
Will Harris provide the cabinet for their equipment at the Clark Summit Repeater Site?  
**Answer:**  
**Harris is only providing a NEMA box for power. All RWIS sites and repeater sites require UPS. An enclosure for the UPS will be the contractor's responsibility.**
8. **Question:**  
On page 17 of the RFP, the power for the Clark Summit repeater site is identified approximately 50 feet from the proposed repeater pole. This appears to be a handhole for the lighting along the roadway. Can Harris provide additional information on the available power at this location? Specifically, if we are to use the roadway lighting, where is the photocell located in the system? The individual lights do not seem to have photocells incorporated which means that they are probably all switched by one photocell located at the start of the circuit. It would be too costly to change over the lighting to accommodate the power for the repeater. Would we be allowed to use another source?  
**Answer:**  
**This site was investigated and an electrical design was completed for the power requirements needed for this repeater site. A conduit with power supply separate from the lighting conduit has been installed for this repeater site and is terminated within 50 feet of proposed site.**
9. **Question:**  
Please provide specifics as to the type of equipment being used for the fiber connections within the facilities to which the RFP states that the Contractor needs to connect to.  
**Answer:**  
**The connection for Milepost 245.70, A57.4, and A94.85 within the various facilities is a copper 10/100 Base T. Your design at the front end will dictate what is needed at the facility connection end.**

10. **Question:**

At fiber connection locations (underground and comm rooms), will the Contractor be allowed to use existing patch panels and splice cases (if room is available) in order to make their connections?

**Answer:**

**Existing patch panels are available at Milepost 245.7 Central Office and A94.85 Pocono Maintenance Miller Building. The contractor will need to provide a patch panel at Lehigh Valley Interchange.**

11. **Question:**

In some locations there seems to be an existing metered device located within the vicinity of the proposed RWIS location. Would the PTC prefer to use the existing services if possible or will the Contractor be required to provide a new metered service at these locations?

**Answer:**

**The contractor is responsible to establish power at each of the RWIS locations.**

12. **Question:**

At MP10.1 the current GPS location provided by the PTC depicts the RWIS to be located over 100 feet away from the newly constructed roadway. Has Harris visited this site since the construction started and are they aware of this issue? Due to possible Line of Sight (LoS) issues, should the Contractor use the current information within the RFP to produce bid numbers assuming that a Change Order will be allowed if a LoS can be acquired closer to the roadway? Or should our cost reflect the assumption that the proposed location can be relocated closer to the current roadway?

**Answer:**

**This RWIS is located at 10.2 Eastbound (see photo below). The Tower can be seen in the distance mid-span of the bridge structure. This tower is located at New Castle Interchange, Milepost 10.0.**



13. **Question:**  
At MP 10.1 will the Contractor be allowed access to perform work at this site during the current roadway/bridge construction project?  
**Answer:**  
**No work is currently ongoing or planned in the immediate area at this location. Refer to special provision Coordination of Work page A4 of A31 for any coordination with Turnpike operations.**
14. **Question:**  
At MP 10.1 due to the current construction and vehicle congestion will the Contractor need to perform the work requiring lane closures at night time?  
**Answer:**  
**See answer to question number 13 with respect to current construction. Lane closures for this project will be provided by the Turnpike Maintenance Department during daylight hours only Monday through Thursday from 10 am until 2 pm daily. All shoulder closures are the responsibility of the contractor (see page A6 of A31 for Maintenance and Protection of Traffic during Construction).**
15. **Question:**  
Will terms/conditions and/or a sample of contract be provided?  
**Answer:**  
**No**

All other terms, conditions and requirements of the original RFP dated September 22, 2010 remain unchanged unless modified by this Addendum.