REQUEST FOR PROPOSALS FOR

Infrastructure Cabling Maintenance and Communication Systems Installation

ISSUING OFFICE

Pennsylvania Turnpike Commission Information Technology Department Technology Infrastructure Communication Systems

RFP NUMBER

11-10350-2964

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REQUEST FOR PROPOSALS FOR

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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 **Infrastructure Cabling Maintenance and Communication Systems Installation**.

I-2. Issuing Office. This RFP is issued for the Commission by the Information Technology Department, Technology Infrastructure, Communication Systems.

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 Commission is seeking a contractor who has the comprehensive skills, resources and certifications to maintain and install the voice, data and auxiliary communication systems and cabling infrastructure throughout the Pennsylvania Turnpike. In addition the contractor must be able to provide any electrical services that may result from a task in this contract, provide accurate as built documentation in both Viso and AutoCad format and be able to engineer solutions for infrastructure cabling projects.

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 Time and Materials Type 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, which 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 prime 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 contractor 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. Mandatory Pre-proposal Conference. A mandatory pre-proposal conference will be held **Tuesday, March 1, 2011 at 10:00am** in Conference Room 038, at the Commission's Central Administration Building, 700 South Eisenhower Blvd., Middletown, PA. The purpose of this conference is to clarify any points in the RFP, which may not have been clearly understood. Questions should be forwarded prior to the meeting to ensure sufficient analysis can be made before an answer is supplied. Written questions should be submitted by email to <u>RFP-Q@paturnpike.com</u> with **RFP 11-10350-2964** in the Subject Line to be received no later than **2:00 P.M., Monday, February 28, 2011**. In view of the limited facilities available for the conference, it is requested representation be limited to **2** individuals per Proposer. The pre-proposal conference is for information only. Answers furnished during the conference will not be official until verified, in writing, by the Issuing Office. All questions and written answers will be issued as an addendum to and become part of this RFP.

FAILURE TO BE REPRESENTED AND SIGNED IN AT THIS MANDATORY PRE-PROPOSAL CONFERENCE WILL BE CAUSE FOR REJECTION OF PROPOSAL.

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: **Stephanie Newbury**, on or before **12 P.M., Tuesday, March 15, 2011.** 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 abovelisted 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 in **8** hard 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. <u>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 and this RFP will become contractual obligations if a contract is entered into.</u>

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 or telefax 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 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.

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." To obtain best and final offers from Proposers, the Issuing Office may do one or more of the following: a) enter into pre-selection negotiations; b) schedule oral presentations; and c) 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.

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:

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

<u>Trade secret</u>: 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; <u>and (2)</u> 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 <u>www.openrecords.state.pa.us</u>.

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 contractor will be responsible to provide all the labor, tools, parts, installation supplies, installation equipment, including trucks and vans, test equipment and instrumentation, office supplies and generally any materials that are required to perform the services requested through the term of this contract. The contractor may be required to provide storage space for equipment like cabinets, racks and cable during the term of the contract. The Commission will not provide any physical storage space, office space or any office services to the contractor.

The Commission will not supply any parts, equipment, tools or materials for this contract except for access points, antennas and antenna lightening arrestors for wireless installation, fiber drivers and GAI-Tronics equipment.

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 in three (3) years with the option to extend for two (2) additional years if the contractor's work is satisfactory. The Commission shall fix the Effective Date after the contract has been fully executed by the Contractor 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. 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 liability; explosion, collapse and underground; personal injury; independent contractors; broad form property damage; severability of interests provisions; personal injury and advertising liability; premises medical payments; host liquor liability; fire damage legal liability - real property; incidental malpractice (including employees); non owned watercraft; and automatic coverage for newly acquired entities. The minimum required limits for the Commercial General Liability policy will be as follows:

\$1,000,000 Each Occurrence
\$1,000,000 Advertising and Personal Injury Limit
\$1,000,000 General Aggregate per Location/Per Site
\$1,000,000 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:

\$4,000,000 Per Occurrence \$4,000,000 General Aggregate \$4,000,000 Products/Completed Operations Aggregate

F. Special Hazards. Requirements concerning Insurance for other special hazards will, if required, be included in the Special Provisions.

G. Proof of Insurance. Before commencing work, furnish to the Commission three original certificates of insurance outlining the coverage's 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's.

H. Payment. Incidental to the project.

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 Part II-1 through II-7 hereof; (ii) Cost Submittal, in response to Part 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.

II-1. Statement of the Problem. State in succinct terms your understanding of the goals, objectives and the services required by this RFP.

II-2. Management Summary. Include a narrative description of the types of services you believe your organization can provide to the Commission that would meet the requirements of this RFP.

II-3. Work Plan. Describe in narrative form your technical and managerial approach for accomplishing the types of work outlined in this RFP. Use the task descriptions in Part IV of this RFP as your reference point. Modifications of the task descriptions are permitted; however, reasons for changes should be fully explained.

II-4. Prior Experience. Include experience in similar efforts of this type, scope and duration as it applies to infrastructure cabling installation and maintenance for copper, fiber and coaxial cable, communication systems installation like GAI-Tronics radio hardware/cabling, tower climbing services, wireless site surveys and feasibility analysis, air blown fiber installations and any special skills that you believe are applicable to this RFP. Experience shown should be work done by individuals who will be assigned to this contract as well as that of your company. Projects referred to should be identified and the name of the customer shown, including the name, address, and telephone number of the responsible official of the customer, company, or agency who may be contacted.

II-5. Personnel. Provide a list of types of personnel you and/or your subcontractor would be able to provide for this contract, to achieve the goals and tasks set forth in this RFP.

Contractors should supply the name of their proposed Project Manager. Include the Project Manager's resume. Provide in detail the qualifications of your proposed Project Manager and demonstrate their ability to manage concurrent installations, coordinate staff, materials and equipment to satisfy work orders/requests, and coordinate work requests for multiple locations in different parts of the state.

Provide resumes or similar documentation indicating the education, certifications and experience in this type of work for all personnel that will be involved in this contract.

Identify all subcontractors you intend to use, the services they will perform and include resumes or similar documentation for all the subcontractor's personnel that will be involved in this contract.

Indicate what roles any of the identified personnel will have in the contract and how long each has been in your employ and/or your subcontractor's organization.

Indicate your organization's ability to provide sufficient numbers of personnel to adequately meet all requirements of this RFP for the full term of the contract.

Explain how you will be able to assume the Commission's existing warranties and provide a warranted solution for any new installations of cabling throughout the term of the proposed contract period.

II-6. Equipment. Provide a summary list of equipment that your company owns which could be utilized during the course of this contract where you could eliminate a third party rental cost for the Commission. Examples would be bucket trucks, snooper truck, lifts, fiber air blowing equipment, fiber testing equipment, etc.

II-7. DBE/MBE/WBE Participation. The Turnpike Commission is committed to the inclusion of disadvantaged, minority, and woman firms in contracting opportunities. The minimum participation level for DBE/MBE/WBEs in this contract will be 10% total. Responding firms shall clearly identify DBE/MBE/WBE firms, expected to participate in this contract, in their Proposal. If the selected firm does not meet the minimum requirement for DBE/MBE/WBE participation, they will be required to demonstrate good faith efforts to achieve the required level. The Commission recognizes the following small, disadvantaged, woman and minority-owned business certifications for this RFP:

PA Unified Certification Program www.paucp.com

PA Department of General Services www.dgs.state.pa.us

National Minority Supplier Development Council www.nmsdcus.org

Women Business Enterprise National Council www.wbenc.org

U.S. Small Business Administration small disadvantaged businesses or 8(a) small disadvantaged business concerns

Evidence of "Good Faith" includes but is not limited to:

1. Vendor shall solicit through all reasonable and available means (pre-proposal meetings, advertisements and/or written notices) the interest of DBE/MBE/WBEs who have the capability to perform the work of the contract. Make solicitations for services/goods that are within the project scope and which you reasonably expect to utilize.

2. Vendor shall keep a detailed record indicating date, type of contact, DBE/MBE/WBE business contacted, and the services/goods solicited.

3. Vendor shall provide adequate information to DBE/MBE/WBEs, in a timely manner, about the project description to allow adequate time for their response to solicitations.

4. Vendor shall contact issuing agency for lists of certified DBE/MBE/WBEs and keep a record of all solicitations made.

5. Vendor shall identify portions of work (goods/services) that can be performed by DBE/MBE/WBEs and keep a record of all solicitations made.

6. Vendor shall use the services of available minority/women business assistance offices at the state and local level to identify DBE/MBE/WBEs and keep a record of such contacts.

If further information is desired concerning DBE/MBE/WBE participation, direct inquiries to the Pennsylvania Turnpike Commission's Contracts Administration Department by calling (717) 939-9551, Extension 4241.

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. The cost proposal should also include any good faith discounts offered by the contractor.

The total cost you are proposing must be broken down but not limited to the following components:

- **a. Direct Labor Costs.** Itemize to show the following for each category of personnel with a different rate per hour:
 - **1.** Category: i.e. project manager, planner/engineer, cable installers, laborers, electricians, technicians, tower climbers, etc.
 - **2.** Rate per hour.
- **b.** Labor Overhead. Specify what is included and rate used. If there is no labor overhead rate in your proposal, so state.
- **c. Travel and Subsistence.** Itemize transportation, lodging and meals per diem costs separately. Travel and subsistence costs must not exceed current Conus rates and IRS approved mileage rates. If there are no travel and subsistence in your proposal, so state.
- **d. Subcontract Costs.** Itemize as in (a) and (b) above. If there are no subcontract costs in your proposal, so state.
- e. Cost of Supplies and Materials. Itemize using "Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List – Approved". Show unit cost per item and/or measurement used. Contractor must use feet for unit cost when pricing out cable. Contractor should use meters for patch cables unless otherwise designated.
- **f. Mark Up**. State the percentage of mark up that you add to the cost of materials. If there are varying rates provide details on how you determine the percentage.
- **g.** Waste. Specify what percentage is added to an overall cable material order to incorporate projected waste when calculating amounts of cable to order for a work order/project. Contractor should show the computation details they use to determine the

percentage. Contractor should show separate detail for copper and separate detail for fiber. In addition, specifically note at what footage a cable reel is discarded and charged off to the customer as material in lieu of returning back to your inventory.

- h. Other Direct Costs. Itemize. If there are no other direct costs in your proposal, so state.
- **i. General Overhead Costs.** Specify what is included and rate used. If there are no general overhead costs in your proposal, so state.
- **j. Storage of Commission Parts and Hardware** the contractor should state the rate, if any, that they will charge to store parts and hardware associated with this contract for the Commission.
- **k. Total Cost per Data Type Cable** the contractor should state the cost to install a new communication data cable identified in this RFP as it is fully terminated, tested and functional, meeting the standards set forth in this RFP. The contractor should break down the cost by itemized parts and labor for each of the following:
 - 1. The contractor should provide costs for <u>100 foot</u>, <u>150 foot</u> and <u>200 foot</u> installations for the following:
 - a. Plenum copper data cable using LANmark-2000 Enhanced Category 6 10163780 to NetClear GT3 standards
 - **b.** Riser copper data cable using LANmark-2000 Enhanced Category 6 10167477 to NetClear GT3 standards
 - **c.** Plenum GAI-Tronics copper cable using Belden 6347FE
 - d. Riser GAI-Tronics copper cable using Alpha Wire 2249C
 - e. Plenum fiber station cable using Corning 004K88-31130-29 with MTRJ to MTRJ connectors to NPI standards
 - **f.** Riser fiber station cable using Corning 004K81-31130-24 with MTRJ to MTRJ connectors to NPI standards
 - 2. The contractor should provide the cost for 1 mile of fiber cable as it is fully terminated, tested and functional meeting the standards set forth in this RFP.
 - **a.** Install, fusion splice and terminate fiber roadway cable using Corning 96 strand single mode 096EW4-T4101D20, M67-048 splice tray, 12 strand single mode pigtail connectors 000412R8131003M to NPI standards
 - **3.** The contractor should provide the cost for installing <u>1000 feet</u> of fiber cable as it is fully terminated, tested and functional meeting the standards set forth in this RFP.
 - **a.** Fiber campus cable using Corning 12 strand single mode 012EW4-T4101D20 fusion spliced in M67-110, terminated using 12 strand single mode pigtail connectors 000412R8131003M to NPI standards
 - **b.** Fiber Campus cable using Corning 24 strand single mode 024EW4-T4101D20 with 95-201-98SP single mode LC connectors and CCH-CP24-A9
 - **4.** The contractor should state the cost for 100 foot of cable as it is fully terminated, tested and functional meeting the standards set forth in this RFP.
 - **a.** LMR-400 coaxial cable antenna connection

- 5. The contractor should state the cost for 200 foot of cable as it is fully terminated, tested and functional meeting the standards set forth in this RFP.
 - **a.** LMR-600 coaxial cable antenna connection
- 1. Total Cost per Voice Type Cable the contractor should state the cost per drop of each type of voice cable identified in this RFP as it is fully functional, tested and meets the standards set forth in this RFP. The contractor should state the cost by indicating the charge per foot to pull new voice cable by type, the charge to terminate the cable into a jack by type, and the charge to punch down the cable by type on the block types indicated in this RFP.
- **m. Re-termination Services** the contractor should state the cost to re-terminate the following cable types for each end:
 - **1.** CAT 5e
 - **2.** CAT 6
 - **3.** CAT 6e
 - **4.** Fiber station cable MTRJ to MTRJ
 - 5. Fiber Backbone cable MTRJ to MTRJ
 - 6. Voice cable to a 66 type-Block (punch down)
 - 7. Voice/Data cable to a 110 type-Block (punch down)
 - 8. Fusion splice including testing and certification of the splice
- **n.** Floor Racks/Wall Mount Cabinets contractor should provide an installed cost per rack type based on the descriptions in this RFP.
- **o.** Electrical Services contractor should provide the cost for the following services as described in this RFP.
 - 1. Installation of twist lock receptacle described in this RFP
 - 2. Rack electrification contractor should provide the cost for each type of rack identified based on a functional solution as described in this RFP
 - **3.** Conduit installation contractor should provide the cost per foot to install conduit for both indoor and outdoor installation for the following
 - **a.** 1 inch indoor galvanized rigid conduit
 - **b.** 1 inch indoor EMT conduit
 - c. 2 inch indoor galvanized rigid conduit
 - **d.** 2 inch indoor EMT conduit
 - e. 4 inch outdoor PVC conduit for building to building pathways

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 Management Directive 215.9, Contractor Responsibility Program.

III-3. The following criteria will be used in evaluating each proposal:

a. Proposer Qualifications. This refers to the ability of the Proposer to meet the terms of the RFP, especially, the quality, certifications, relevancy, ability to meet schedules and similar contracts recently completed by the Proposer. This also includes the Proposer's financial ability to undertake a contract for the term outlined in this RFP.

b. 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, education and certifications, with particular reference to experience on contracts similar to that described in the RFP. Particular emphasis is placed on the qualifications of the Project Manager.

c. Available Resources. This refers to the contractor's equipment resources which would not have to be provided through a third party for meeting the requirements set forth in this RFP.

d. Business and Technical Methodologies. Emphasis here is on the techniques for reviewing and analyzing the data provided, to determine the most proficient process and methods for managing the contract and completing the requested work employing the highest standards. 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.

e. Available Facilities. This refers to the contractor's ability to warehouse and distribute materials from their site, to facilitate the project schedules, so that Commission resources are not utilized for storage.

f. Cost. While this area may be weighted heavily, it will not normally 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.

g. 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 or percentage of total contract amount to certified D/M/WBE firms.

PART IV

WORK STATEMENT

IV-1. Objectives.

a. General. The successful contractor will provide technical advice, problem resolution, installation, maintenance and repair for the Commission's communication infrastructure and auxiliary communication systems across the state of Pennsylvania. The contractor will assume all existing warranties and all new warranties that become active during the term of this contract.

Specific. The Commission is seeking a contractor who has the comprehensive skills, resources b. and certifications to maintain/warrant the voice, data and auxiliary communication systems installation and cabling infrastructure throughout the Pennsylvania Turnpike. The contractor would provide maintenance services inclusive of adds, moves and changes to the cabling infrastructure as it currently exists and would assume maintenance/warranty responsibility for existing and future cabling that is installed as a result of new construction of Commission facilities and highway construction projects. The contractor may be asked to provide tower climbing services as part of this contract. The contractor must be able to provide any electrical services that may result from a task in this contract. The contractor would be responsible for installation of GAI-Tronics radio/intercom hardware, phone hardware and miscellaneous electronics install/demolition during the term of this contract. The Turnpike uses a variety of cabling to provide communication solutions including fiber, copper and coaxial cable infrastructure across the state. The Commission has established Wide Area Network (WAN) services, wireless, radio/intercom and telephone communication throughout the state of Pennsylvania in various structures along the Turnpike. The Commission has two Administrative Buildings in Middletown and Regional Offices East and West. The Commission's Fares structures are located in 6 Districts and the Maintenance structures are divided into 5 Districts throughout all routes that comprise the Pennsylvania Turnpike.

IV-2. Nature and Scope of the Project. The Commission currently has around 140 buildings/sites with infrastructure cabling across the state of Pennsylvania. The Commission is also including conduit and the installation of roadway fiber in new construction and road re-build projects. Around 50% of the services that the contractor will provide through this RFP will be generated through the re-modeling of Commission facilities. The number of re-modeling projects are estimated at 15 per year. The amount of data/voice cabling affected due to a re-modeling project per work order is estimated from around 20 to 100 connections, depending on the size and type of location. This may include conduit and electrical installations depending on the work order. Approximately 20% of services would be generated for modifications, demolition and installations of GAI-Tronics Radio/Intercom cabling, conduit, tele-panels and communication cabinets. About 30% of services would be comprised of troubleshooting cabling problems, replacing or repairing problematic cabling/parts including roadway fiber, migrations to Miller Buildings, minor changes in requirements at a facility, providing direction and technical solutions and on occasion services for a catastrophic event like a cable bundle being severed. Migrations to a Miller Building for a facility that is all copper may result in re-cabling of the entire premises. The contractor will provide maintenance services for adds moves and changes to all infrastructure cabling including premise fiber, outdoor plant fiber, campus fiber, roadway fiber, coaxial cable and all copper cable including data, voice and GAI-Tronics cabling. The contractor will coax-seal wrap all coaxial cable to prevent moisture penetration. The contractor will fire stop and seal all penetrations made into any building structure by the contractor. The contractor must support whatever level of cabling is located at

a site to provide consistency and compatibility with all components. If the option for a complete replacement of cabling is part of the work order, the contractor will install the highest level of that type cable and compatible components available at the time the work order is issued. The contractor will be responsible for terminating all types of fiber, terminating copper for data/voice/radio-intercom/wireless access points and punching down all voice cable. The contractor will be responsible for installing access points, antennas and coaxial cables for wireless communication. The contractor may have to run coaxial cable feeds for video and terminate to a jack with BNP connectors. The contractor must supply all test equipment for the certification of terminated cabling, perform the tests for any cables they terminate and provide the test results to the Commission. The contractor must provide all equipment necessary and have the resources in trained personnel to perform any fiber splicing mechanical or fusion as required, provide all test equipment to certify the splice and provide the test results to the Commission. The contractor will provide all analysis equipment and the technical staff to properly identify the cause of a cabling problem and determine the appropriate action for problem resolution. The contractor must provide a technical staff that is certified and continues the necessary training/preparation as required by the associated suppliers to assume and provide continuation of the Commission's existing Corning Cable Systems LANscape® Solutions Network of Preferred Installers, (NPI), 25-Year System Warranty, NetClear® and NetClear® GT3 25-Year System Warranty, AMP NetConnect Warranty and GAI-Tronics system initialization/certification. The contractor must provide all standing racks, rack components and wall mount cabinets that are required as part of a work order. The contractor must provide all equipment including bucket trucks, ladders, hardware, etc. and manpower to maintain and install supporting structures throughout the Commission's facilities for cabling including conduits and all wireless network connection masts/tripods. The contractor may be required to provide any electrical services that may result as part of a work order including but not limited to appropriate grounding, grounding bars, rack/cabinet electrification, electrical outlets, electrical plugs for Miller Buildings, conduit installation, conduit repair/maintenance, and installation of junction boxes, etc. There is a possibility that the contractor may have to install additional conduit runs across Maintenance Facility garage bays if the existing conduits are full. The contractor will be required to install/re-install all GAI-Tronics components according to the manufacturers requirements and work independently with the GAI-Tronics Corporation Engineers through system initialization and certification. The contractor must provide storage for any equipment, parts, hardware and supplies that are acquired during the term of the contract until they are deployed to a site for installation. The contractor may be expected to un-install equipment such as racks/cabinets, masts/tripods, antennas, coaxial cables, GAI-Tronics equipment, etc. and store those commodities for the Commission during the term of the contract. The contractor may be asked to remove obsolete cabling from facilities. The Commission currently has 14 facilities with high count Corning fiber backbones between buildings, 20 sites with single mode campus fiber between buildings, multiple sites with single mode long haul roadway fiber, around 1,000 Corning Fiber station connections possible to the desk at remote sites, around 1,300 AMP/Pirelli Fiber station connections to the desk, 20 AMP/Pirelli single mode runs, approximately 1,000 BerkTek LANMark CAT5e data drops, around 500 BerkTek LANMark Cat 6 data drops, around 1,500 BerkTek LANMark 2000 data drops, Corning Universal Plug and Play Modules, cables, Corning Pretium® EDGE Solutions modules, trunk cables and housings in the Commission's Data Center, multiple remote sites with single mode fiber runs by others and over 5000 voice connections state-wide. The Commission has multiple construction projects that will be completed over the term of the contract, some of which will include the installation of fiber along the roadway. The selected contractor would be required to assume the warranty and responsibility for that fiber after the construction contractor's responsibilities have been met. See "Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved", for the possible types of equipment, parts and materials for which the selected contractor would be required to provide services. This list should also be used as an Approved Parts Specifications List for the selected contractor. This list is not

meant to be all inclusive/comprehensive of all parts the selected contractor will be required to support during the term of the contract.

IV-3. Work Locations. The contractor's Project Manager will meet with the Commission's Project Manager at the Pennsylvania Turnpike Commission Administration Building for any meetings that might be requested during the term of the contract at the Pennsylvania Turnpike Administration Building located at 700 South Eisenhower Blvd., Middletown, PA 17057. The primary contact designated for all contract related questions during the term of the contract is Stephanie J. Bentley, phone, (717) 920-7410, email <u>sbentley@paturnpike.com</u>.

The Commission's cabling infrastructure is statewide and as such the contractor should be able to provide services in a reasonable time frame to any location as requested. Refer to section IV-6 for guidelines. The territory spans all highways that comprise the Pennsylvania Turnpike with communication requirements in most building structures along the route. Structures include Interchange Office Buildings, Maintenance Facilities, Maintenance Facilities with State Police Barracks, Fares Building, Fares Building with State Police Barracks, State Police Barracks, Tradesman Buildings, Warehouses, Miller Buildings, Construction Trailers, Tunnels, Training Centers and various other external semi- permanent bunker type facilities. **Review "APPENDIX A Pennsylvania Turnpike Commission Distribution of Infrastructure Cabling Resources"**, for a list of locations, types of cable and types of facilities. This information should help you gain an understanding of the territory that must be covered and the variety of cabling the selected contractor will be required to warrant, maintain and install.

Structures Descriptions and Cable Types:

All Building Structure Types - have copper cabling for voice communication – typically 25, 50, 100 or 200 pair cable bundles – CAT 3 or better, except some un-manned facilities. VoIP sites are primarily CAT 6e. Buildings that do not have fiber to the desk are CAT 5e or better for data.

Miller Buildings with \mathbf{RF} – coaxial antenna cable runs from the exterior of the building where the antenna is mounted, through the access stub, to beside the grounding bar in the Miller Building, cable is grounded to the grounding bar.

Miller Building at a Maintenance Facility - 11'8'' W x 28'L x 9' H, concrete structure, houses communication equipment, environmentally controlled, usually multiple 4 inch conduit feeds from connected external buildings for cable runs, usually high count fiber from Miller Building to Maintenance Facility – average length is 750 feet, termination panel is installed into 7 foot standing rack. One Maintenance Facility has CAT 6e running from the individual data jacks through conduit to the Miller Building.

Miller Buildings Directly Connected to Another Miller Building – in several instances a Communication Miller Building is hard cabled to a Technician Miller Building –typically CAT 5e copper cable that is terminated in a panel in the Communication Miller Building 7 foot rack, runs through a conduit and is directly terminated into the data jacks in the Technician Miller Building.

Miller Building at an Interchange – 11'8'' W x 28'L x 9' H, concrete structure, houses communication equipment, environmentally controlled, usually multiple 4 inch conduit feeds from external buildings for cable runs, has copper station cable running from the Interchange Office Building termination panel through conduit to the Miller Building termination panel that is installed in a standing rack.

Miller Building at an Un-manned Interchange with Administrative Network Requirements -

11'8" W x 28'L x 9' H, concrete structure, houses communication equipment, environmentally controlled, usually multiple 4 inch conduit feeds for cable runs – may share space with electrical cables, typically has 12 strand single mode fiber runs between Plaza Miller Buildings terminated into fiber panels, has long haul road fiber terminated into splice trays, installed in 7 foot standing racks.

Technician Miller Building, Blue Miller Building at a Maintenance Facility or District Fares Building – variable size, bunker style semi-permanent or normal Miller Building, for technical staff on mainline, either direct conduit stub feed from inside a Fares Building with copper cable from cabinet termination panel to individual data jacks, or in most instances a RF connection with coaxial cable brought into the cabinet/rack, from the antenna mounted on the exterior of the building and interior copper cable from the cabinet termination panel to the individual data jacks.

Communication Building on a Campus – various sizes, multiple structure materials, houses communication equipment, environmentally controlled, usually multiple 4 inch conduit feeds from connected external buildings for cable runs, usually 12 strand single mode fiber and a copper phone cable bundle from the Communication Building to each Campus Building – average length is 600 feet, may have long haul road fiber to some of the buildings in the campus, termination panels and splice trays are installed into 7 foot standing racks.

Maintenance Facility with or without State Police Barrack with Miller Building – vary in size and complexity, large garage bay, approximately 25 feet in height, with the exception of Greensburg Maintenance which has a bay height of approximately 40 feet, offices/network requirements on either side of the bay, (there are exceptions to this), could have 2 floors that may require maintenance, fiber cable to the desk, average station fiber run length is approximately 200 feet, high count fiber between the Miller and Maintenance Building through conduit, station and high count fiber terminated in the Maintenance Facility rack/cabinet, in separate termination panels and high count fiber terminated in the Miller Building termination panel.

Maintenance Facility with No Miller Building - Copper – vary in size and complexity, all offices are located on one side of the facility, you do not have to traverse a large garage bay, typically 1 floor, copper cable from termination panel in a rack in the Maintenance Building to the individual data jacks.

Maintenance Facility with No Miller Building - Fiber – vary in size and complexity, may or may not have to traverse a large garage bay (see description above), all station cable runs from a termination panel located in the Maintenance Building to the data jack.

Interchange Office Building with a Miller Building – copper cable is terminated in a termination panel in a rack in the Miller Building, runs through conduit to the Interchange Office Building, and is terminated into the individual data jacks.

Interchange Office Building without a Miller Building – copper cable is terminated in a termination panel in a rack in the Interchange Office Building and runs through the building to the individual data jacks.

District Fares Office Building – vary in size and complexity, copper cable is terminated in a termination panel in a rack/cabinet in the Office Building and the cables are run through the building to the individual data jacks, average run is approximately 200 feet. Both Regional Offices have District Fares located within their building complexes.

External Buildings for some Stores, some Tradesman, some State Police, some Technician

Buildings, with \mathbf{RF} – vary in size and complexity, all network services are achieved through wireless RF technology, with a coaxial cable from the antenna on the exterior of the building to the cabinet/rack inside the building, all data cables are copper terminated to a termination panel in a rack in the building with the cables run directly to the data jacks.

Some External Buildings for Stores, some State Police Barracks, some District Fares Buildings, some Engineering Trailers, Old Interchange Office Building for Engineering, some Maintenance Facilities, some Tunnel locations - Campus Environments – vary in size and complexity, all network services are achieved through a 6, 12 or 24 strand single mode fiber run to an Interchange rack or Miller/Communication Building rack to the cabinet/rack inside each individual structure, all data cables are copper, terminated to a termination panel in a rack in the building with the cables run directly to the data jacks.

Engineering Trailers – considered external structures to a Maintenance Facility or Interchange, typically a wireless RF technology network connection, coaxial antenna cable into the wall mount cabinet from the antenna mounted on the exterior of the trailer, internal cabling in trailers is copper terminated into a termination panel in a cabinet in the trailer and cable run directly to the data jack.

Tunnels - each tunnel end is considered a separate network – single mode fiber through tunnel end to end – most are 6 strand single mode, some fiber runs from floor to floor to connect various electronics cabinets, internal station cabling is copper that is terminated in the termination panel in a wall cabinet in the tunnel and the cables run directly to the individual data jacks, could be 2 to 3 floors but the electronics cabinet is typically on the 2^{nd} floor switch equipment area, some tunnels have fiber installed from external sites like tower compounds or Maintenance Miller Buildings which are typically 12 strand and can be either single mode or multimode, several tunnels have RF to Training Centers.

Training Centers – structures/trailer(s) located off an entrance to a tunnel that are connected to the network through wireless RF technology, coaxial antenna cable from the external antenna mount, to the wall mount cabinet in the training center, the internal station cabling is copper that is terminated into a termination panel in the wall mount cabinet in the structure/trailer with the cable runs terminated directly into the data jacks.

Regional Offices, Central Office and TIP Building – these offices have both copper and fiber infrastructure cabling and coaxial cable feeds for video. The Western Regional Office has fiber to the closets, copper premise cabling, copper to the desk and single mode fiber to the Tyson's Corner Tower site. The Eastern Regional Office has internal premise cabling, copper to the desk, and a RF connection to the Groundskeeper Building, with copper internal to that facility. Central Office is primarily AMP copper and fiber to the IDF's and desk, has a Communication Technician Building connected through fiber with copper to the desk and has Corning single mode fiber and Corning Edge Fiber running to the TIP Building. The TIP Building has copper premise cabling, copper to the desk, the Commission's Data Center which is an Edge Fiber solution, has BerkTek/Ortronics components with copper cable bundles and a PBX Center with single mode fiber, BerkTek/Ortronics components and copper cable bundles.

IV-4. Tasks. Tasks associated with this RFP should include but are not limited to the following:

Perform troubleshooting for every type of cabling the Commission utilizes and determine appropriate resolution to problems, estimated effort in time and resources and provide the information to the Commission's Project Manager.

Install new cable runs using the appropriate type and approved part as requested, terminate and test. Label all cables as designated by the Commission's labeling standard.

Provide air blown fiber installation as requested.

Provide mechanical or fusion splice of fiber and test.

Install antenna mast/supports, antennas, lightening arrestors, coaxial cable, cable wrap and ground as appropriate for all RF technology solutions.

Pull back and/or re-pull existing cable for changes, re-terminate if necessary and test.

Provide tower climbing services as requested.

Install or move, initialize all GAI-Tronics components as required and work in partnership with GAI-Tronics Corporation for system certification/re-certification.

Provide cabling and all associated materials and parts and install all hardware as necessary using approved parts, to provide a working network connection.

Provide patch cables and cross over cables for each work order or as requested.

Re-terminate various types of patch cables or assemble patch and cross over cables as requested. Demolish all types of cabling infrastructure components, wireless components and GAI-Tronics components as requested.

Provide electrical services like the installation of conduit with pull strings, junction boxes, electrification of racks, grounding as appropriate, grounding bars, etc.

Install racks and cabinets and ground as appropriate.

Punch down voice cable to 66 - type termination block.

Punch down voice/data cable to 110- type termination block.

Provide test results to the Commission's Project Manager as designated in section IV-5.

Provide all as-built documentation and as-built updates for all cabling activities as designated in section IV-5.

Maintain and assume all warranties.

Provide design, strategy, advice and direction for all infrastructure cabling issues as requested.

IV-5. Reports, Deliverables and Project Control.

a. Work Order Scheduling/Completion. The contractor's Project Manager must notify the Commission's Project Manager of the anticipated schedule for the initiation of a work order, the number and names of all personnel that will be dispatched and their estimated time of arrival on site. This notification must be sent via email to the Commission's Project Manager. The contractor's Project Manager must notify the Commission's Project Manager when a work order has been completed via email.

b. Progress Reporting. A periodic weekly progress report covering activities, problems, and recommendations for any work orders/projects that span multiple weeks; the report should be keyed to the work plan developed by the Proposer in its proposal, as amended or approved by the Commission.

c. As Built Drawings. The contractor will assume responsibility for updating or creating as-built documentation in AutoCAD and Visio format, on a request basis and as part of the deliverable on work orders for adds, moves, changes and installations before the tasks are considered completed for invoicing. The as-built documentation must be received prior to or with invoicing before the job will be processed for payment.

d. Test Results. All test results for cabling must be delivered via email using text format in individual PDF files and fluke test format files or through both email and CD if requested by the Commission's Project Manager. The location and type of cable must be clearly designated on the CD and the contractor must use the labeling cable standard name as the file name for each individual cable. Results must be received by the Commission's Project Manager **prior to or with invoicing before the job can be processed for payment.**

e. Warranty Documentation. All warranty documentation submittals to the appropriate vendor are the responsibility of the contractor and should produce an issued warranty certificate to be receipted by the Commission's Project Manager at the Turnpike's Administration Building, no later than 2 weeks post installation. The contractor's Project Manager should provide the Commission with proof that the documentation was submitted for warranty to prevent invoice payment delays in case the warrantor does not provide the certificates within the 2 week period.

f. Invoices. The contractor's Project Manager should provide an invoice for services in a timely manner. The information on the invoice must include but should not be limited to the location where the work was performed, a general description of the work and the charges broken out between labor, project management, materials and travel expenses. The accompanying documentation should include a complete material list showing meaningful descriptions, quantity ordered and line extensions for total cost per part. The contractor should provide a list of the personnel that provided the services, their hours by date, and any travel/per diem costs by date for each.

IV-6. Proposed Schedule For Delivery Of Services. Delivery of services must be a priority to the contractor and coordinated with the Commission's Project Manager for this contract. Each work order will be given a level of criticality as follows and the Commission would expect the response level as indicated. 95% of the work requested for this contract is expected to be at a **medium level**.

Critical – indicates a very high level response/resolution warranted **immediately within the same day as requested.** Personnel would be deployed as soon as the request is made. This level would be reserved for unplanned/unanticipated work and used primarily for a catastrophic event.

High - indicates a high response warranted **within 24 hours of the requested service.** Personnel would provide next day service deployment. This work would be mostly unplanned/unanticipated and the level would be used infrequently to provide services for work that requires a quick response.

Medium – indicates a deployment **within 1 to 2 weeks of the requested service.** These services would be planned activities between the Contractor's Project Manager and the Commission's Project Manager with specific start and completion dates.

Low – indicates a deployment/response within **3 to 4 weeks of the requested service** – these services might include any miscellaneous tasks like requests for documentation, planning services, etc.

IV-7. Certifications, Resources and Work Skills

The Contractor, must have the following resources available for the term of the contract with the certifications/credentials and experience levels as stated below. Proof verifying the certifications/credentials, experience and resources must be provided at the time the proposal is submitted.

The Contractor must be a **certified Corning LANscape Network Preferred Installer Member** and provide evidence of current NPI program membership. The Contractor must offer a 25-year warranty for the premise/campus fiber cabling solution comprised of covered Corning Cable Systems' products and must follow all warranty registration procedures set forth by Corning Cable Systems for installations, modifications and maintenance, including submitting all required materials to Corning Cable Systems for warranty certification.

The Contractor must be a **Certified Installer Plus, NetClear® Warranty installer** and provide evidence of program standing. The Contractor must offer a NetClear® 25-year System Warranty on the copper, premise/campus structured cabling system, comprised of BerkTek/Ortronics' products and must follow all warranty registration procedures set forth for installations, modifications and maintenance. The Contractor must be a **certified AMP NetConnect Warranty provider**. The Contractor must offer an AMP NetConnect 20-year System Warranty on all AMP cabling and components installed at the Commission's Administration Building.

The Contractor must have previous **comprehensive**, (full system installation), experience for GAI-Tronics' communications equipment as stipulated in accordance with the GAI-Tronics Corporation Installation, Operation, and Maintenance Manual. Proof of successful system initialization/certification by GAI-Tronics personnel is required.

The Contractor must **be able to provide any electrical requirement solutions** utilizing appropriately certified personnel for each task, throughout the project duration, (ie: additional conduit installation, electrical cable installation, receptacles and grounding, grounding bar installation, etc.).

The Contractor must have a **qualified Project Manager on staff** assigned and available to be on site at any Commission facility as required throughout the term of the contract.

The Contractor must have a **certified RCDD on staff** that will be available during the term of the contract to advise the Turnpike on design, architecture and strategy for infrastructure cabling planning/modifications.

The Contractor must have an **AutoCAD operator on staff** that will be available during the term of the contract.

The technicians the contractor intends to utilize during the contract period must be identified in the proposal by providing a resume of the personnel's background, experience and education and by indicating the intended types of work to which the individual would be assigned. The contractor is under an obligation to disclose additional unidentified personnel that will be utilized during the course of the contract period by submitting a resume of credentials and reaching an agreement with the Commission's Project Manager prior to deployment of that personnel. The contractor must be able to assign technicians that have experience in troubleshooting, installing, terminating and testing all types of fiber, copper and coaxial cables. The contractor must provide proof that assigned personnel are pursuing current training. The contractor must demonstrate that they have the necessary resources available in personnel, experience and equipment to perform more advanced types of fiber cable

maintenance such as the components and skills required to successfully splice fiber, mechanical or fusion. For work distribution of employees, the Commission would expect that an individual technician responding to a work order request must have at least one year of field experience in the area they will be dispatched to handle. If there are multiple technicians dispatched for a work order, the Commission would expect a Senior technician with no less than 2 years field experience in all facets pertaining to that work order to be on site with any junior level personnel at all times to participate and oversee all operations throughout the term of the work order.

IV-8 INFORMATION HANDLING. All information handling including work orders, requests for services, deliverables, warranties, requested reports, recommendations, problems and any/all other types of communication/information that involves this contract must be handled between the contractor's Project Manager and the Commission's Project Manager at all times. In addition, technicians on a job assignment should always refer questions back to their Project Manager or the Commission's Project Manager.

IV-9 GENERAL REQUIREMENTS. All cabling and materials included in this specification shall be installed and maintained in accordance with prevailing codes, ordinances and regulations and meet or exceed guidelines sponsored or endorsed by the National Fire Protection Agency (NFPA) and the National Electrical Code (NEC). Specifically, structured cabling system shall be in strict accordance with and reflect the <u>latest standards in effect or that take effect during the term of the contract</u>, presented in the following and that are required to meet warranty requirements as specified in this RFP: National Electrical Code® (NEC)® Section 770 and 800.

Non-Plenum Applications - Applicable Flame Tests: UL 1666. Cables shall be listed OFNR (OFCR) Plenum Applications - Applicable Flame Test: NFPA 262. Cables shall be listed OFNP (OFCP) Finished cables shall conform to the applicable performance of the Insulated Cable Engineers Association, Inc. (ICEA) Standard for Fiber Optic Premises Distribution Cable (ICEA S-83-596-2001) The cable shall meet the requirements of ANSI/ICEA Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-2006

The cable should be in accordance with EIA/TIA-598 Optical Fiber Cable Color Coding The cable shall meet the requirements of ANSI/ICEA Standard for Fiber Optic

Indoor/Outdoor Communications Cable, ANSI/ICEA Standard for Fiber

The cable shall meet the requirements of ANSI/ICEA Standard for Fiber Optic Inside Communications Cable, ANSI/ICEA S-83-596-2001

The optical fiber shall be a matched-clad design manufactured by the outside vapor deposition process Electronic Industries Association (EIA) Publications 455 series of Standard Test

Procedures for Fiber Optic Fibers, Cables, Transducers, Connecting and Terminating Devices

EIA/TIA-455-61-A (FOTP-61) Measurement of Fiber or Cable Attenuation

EIA/TIA -455-171-A Attenuation by Substitution Measurement – for Short Length Multi-mode Graded Index and Single Mode Optical Fibers Cable Assemblies

EIA/TIA-526-14 Optical Power Loss Measurement of Installed Multi-mode Fiber Cable Plant

EIA/TIA-455-60-A Measurements of Fiber Optic Cable Length Using an OTDR

Nationally Recognized Testing Laboratory (NRTL) 11

ANSI/TIA/EIA - 568-B.1, Commercial Building Telecommunications Cabling Standard Part 1: General Requirements, April, 2001

ANSI/TIA/EIA - 568-B.2, Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components, April, 2001

ANSI/TIA/EIA - 568-B.2-1, Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted Pair Cabling Components, Addendum 1 – Transmission Performance Specifications for 4-pair 100 Ω Category 6 Cabling ANSI/TIA/EIA - 568-B.3, Commercial Building Telecommunications Cabling Standard Part 3: Optical Fiber Cabling Components, March, 2000 ANSI/TIA/EIA – 569-B, Commercial Building Standard for Telecommunications Pathways and Spaces, October, 2004 ANSI/TIA/EIA – 570-B, Residential Telecommunications Cabling Standard, April, 2004 ANSI/TIA/EIA – 606-A, Administration Standard for Telecommunications Infrastructure of Commercial Buildings, February, 2002 ANSI/TIA/EIA – 607-A, Commercial Building Grounding and Bonding Requirements for Telecommunications, October, 2002 ANSI/ TIA/EIA – 758-A, Customer-Owned Outside Plant Telecommunications Cabling Standard, August, 2004 BICSI - TDMM, Building Industries Consulting Services International, Telecommunications Distribution Methods Manual (TDMM) National Fire Protection Agency (NFPA - 70), National Electrical Code (NEC) -2005 FCC 47 CFR 68 **NEMA 250** ANSI/C2 National Electrical Safety Code ADA, Americans with Disabilities Act

Fiber cable shall be Corning and Copper data cable shall be Berk-Tek/Ortronics. The installation of all cabling systems must be done in a workman like fashion, resulting in a quality installation for the Commission. Any work judged not acceptable by the Commission must be redone at no charge to the Commission.

The selected contractor will be responsible to ensure that the utmost care is taken during the installation process to minimize any damage to the cable lengths by kinking, crushing, jacket cuts, excessive pull tensions, etc.

All support structures must meet Commission standards. All drops that are fishable should be brought through the wall, all non fishable drops should be concealed using wire mold. No cable is to be left exposed. All cable is to be in conduit, wire mold, or correctly suspended in wire hangers above a dropped ceiling, (following standards for each cable type). All drops should be tied with fabric cable ties, i.e. Velcro. No plastic tie wraps should be used. Open ceiling runs should be concealed in a tray.

Any penetrations made or entered by said contractor will be fire stopped according to EIA/TIA standards and local building code.

The contractor's technicians must provide transition services throughout the contract as required, for any tasks that will disrupt existing connectivity in any way. This includes at least: coordination with Commission contacts at a site to schedule cutover dates and times, relocating and reconnecting the demarc, ensuring network connectivity of all connected devices and troubleshooting and resolving any connectivity problems.

The contractor's technicians must clean up all work areas as part of the work order prior to final departure from the site. The technicians must clean up any parts, dust created during their work, pieces of cable/wire, etc. All areas are to be left at least as clean, or in better condition, as when the technician(s) began work.

Testing and Certification of Cabling

All testing and certification of cabling will be the responsibility of the contractor. Tests must be conducted with FLUKE/MICROTEST devices. Test documentation must be provided in the form of either email and/or electronic media (CD) from the cable tester selected by the contractor and approved by the Commission. See section IV-5 Reports, Deliverables and Project Control.

Racks and Wall Mount Cabinets

The **stability and accessibility** of all newly installed racks/cabinets and those that are re-mounted due to a move or problem that was issued through a work order are the responsibility of the contractor.

7 foot racks must be secured at the top with a brace and ladder assembly to the wall and at the bottom by bolting into the floor. Racks must be placed in the structure according to the Commission standard for that structure. The rack must be accessible from the front and rear for service to electronics.

Wall Mount Cabinets must be secured to the surface on which they are mounted in a manner that they will be stable and secure. The contractor must ensure that the mounted cabinet is **capable of bearing the product, (cabinet), weight <u>plus</u> the capacity rated weight of the cabinet,** without pulling away from the surface to which it is mounted or breaking free of that surface. The contractor **must** provide the Commission with a method to test and quality assure the stability of all wall mount cabinets they install. The rack must be accessible in the front and rear for service to electronics. The cabinet must be mounted so it does not impede access to any other equipment/hardware in the vicinity and so that it can be fully opened without impedance. If it is necessary to provide a strut platform to ensure the cabinet will not break free of the surface the contractor would be responsible for installing the necessary materials.

Electrical requirements not already in existence might need to be installed by the contractor. All electrical work must adhere to Commission standards, and must be in accordance with prevailing codes, ordinances and regulations and meet or exceed guidelines sponsored or endorsed by the National Fire Protection Agency (NFPA) and the National Electrical Code (NEC). The contractor will be responsible for the proper grounding of the cabling infrastructure and all equipment/hardware they install in conjunction with the infrastructure that requires grounding.

Electrical For Racks

Miller Building Receptacles -

The contractor should install a 20 AMP 120 volt twist lock receptacle, (power plug), with mating plug on a dedicated circuit in the ceiling directly above the 7 foot rack.

Miller Building 7 foot rack electrification -

Contractor will install an electrical line from the power plug in the ceiling of the Miller Building, (above 7 foot rack), on the back channel of the rack. The contractor should use flexible rubber SJO wiring down the back channel of the rack. The contractor should install a 110 Volt 20 amp quad gang on the line, attaching the gang to the back of the bottom panel of the rack facing out toward the wall, (center on panel). The contractor should run a 6 foot strip with outlets every 6 inches with a 3 foot pigtail on the end down the opposite back channel, (pigtail should be at the bottom of the rack and be long enough to reach the back of a UPS when mounted in the rack).

7 foot Racks in all other structures -

Contractor will install an electrical line from the electrical panel in the building, on a separate circuit if possible, on the back channel of the rack. The contractor should use flexible rubber SJO wiring down the back channel of the rack. The contractor should install a 110 Volt 20 amp quad gang on the line, attaching the gang to the back of the bottom panel of the rack facing out toward the wall, (center on panel). The contractor should run a 6 foot strip with outlets every 6 inches with a 3 foot pigtail on the end down the opposite back channel, (pigtail should be at the bottom of the rack and be long enough to reach the back of a UPS when mounted in the rack).

Wall Mount Cabinets –

The contractor should install an electrical line from the electrical panel in the building, on a separate circuit if possible, to the wall mount cabinet. The contractor should attach a quad 110 Volt 20 amp gang to the line and the outlet must be installed within the rack enclosure at the top in a manner so all receptacles are fully accessible when the rack is at full capacity.

Patch Panels

Copper Patch Panels – must be high density 48 port capable.

Fiber Patch Panels – must be 144 port capable unless PTC Project Manager designates alternative based on application.

In general the contractor must label each patch panel clearly in accordance with the Commission's labeling standard for continuity.

Fiber Modules

Fiber modules must be Corning Universal Plug and Play.

Cable and Jack Labeling

All cabling must be clearly marked on both ends with permanent marker or permanent label using the Commission's labeling standard. All jacks must be clearly permanently labeled using the Commission's labeling standard.

Service Loops

All service loops within an office area, Miller Building, external building must be long enough so that the cable can reach any corner of the area in which it is installed and be terminated for use, to provide flexibility to move equipment and/or jacks without having to re-run the station or backbone fiber.

Wire Mold

All wire mold must be panduit, color should be off white or match the standard installed at a site if already established.

<u>Rack equipment</u>

The contractor must supply all wire management for a rack – the standard for horizontal is 1U wire management hardware. Wire management must be installed above and below panels and electronics. For vertical cable chase standard see **Appendix B**.

Contractor's Project Manager

Project management is required for the duration of the contract. The proposed Project Manager will work closely with the Commission's Project Manager and Turnpike support staff. The proposed Project Manager is responsible for overall work management and coordination functions for the entire work order. The proposed Project Manager may be required to visit remote locations that will require overnight travel. The proposed Project Manager is responsible to work with the Commission's Project Administrator and the various site contacts to identify, escalate and resolve any problems encountered during this contract. Identification of problems must be made to the Commission within 1 business day of occurrence. The proposed Project Manager is to develop a project schedule that is acceptable to the Commission. The manager is also required to take the steps necessary to ensure that their company adheres to the agreed work schedule. The proposed Project Manager is responsible for coordinating billing and invoicing, as well as coordinating any scheduling issues that arise during each work order. The proposed Project Manager is responsible for providing effective, timely communication to the Commission. The contractor's Project Manager is to act in the best interests of the Commission at all times throughout the term of the contract when determining labor levels, materials and time required to complete any work the contractor is tasked to perform for the Commission while consistently providing high quality results.

APPENDIX A						
		Pennsylvania Tu	rnpike Commission Distribu	tion of Infrastructure Ca	abling Resources	
District	Mile Post			Name	Types	Miller Buildings -
Number	Marker	Highway	Туре	Of Location	Of Cable	External - Wireless
District 1		Toll 43 - Mon-Fayette Highway				
	52.00		Interchange #M52/State Police	Main Line Toll Plaza	C, FO	
	51.40		Maintenance #M51	Jefferson Hills Maintenance	C, FO, LHRF108	
	50.50		State Police #M50	Jefferson Hills PSP Barracks	C, LHRF108, SMF12	CB
	34.96		Interchange #M35/State Police	California - Mainline Toll Plaza	С	
			Tower Site Miller Building	Redstone Tower	C, LHRF96	MB
	25.90		Unmanned Interchange #M26	Ramp 26 Bull Run Road	C, LHRF96, SMF12	MB
	21.90		Unmanned Interchange #M22	Ramp 22 Redstone Way	C, LHRF96, SMF12	MB
	19.50		Unmanned Interchange #M19.5	Ramp 19 Mainline Toll Plaza	C, LHRF96	MB
	18.20		Maintenance #M18	Searights Maintenance Trailer		RF
	10.10		Unmanned Interchange #M18	Ramp 18 Searights Road	C, LHRF96, SMF12, X	MB, RF
	14.50		Unmanned Interchange #W15	Ramp 15 Old Pittsburgh Road	C, LHRF96, SMF12	MB
	4.00		Interchange #W5	Smithleid	C	
	0.00	Toli 66 - Amos K. Hutchinson				
	9.39		Unmanned Interchange #G9	Old PA 66	C	
	7.78		Unmanned Interchange #G8	PA 130		
	7.10		Maintenance #G7.1	Greensburg Maintenance	C, F, HCF48, X	MB, EX-(TR), RF
	0.29					
	4.70		Interchange #G4.7	AKH/Mainline Toll Plaza		
	4.03		Domained Interchange #64	PA 130	C FO SMEAR	
	0.00		Tower Site Miller Building	Tyson's Corper Tower	C, FO, SIVIF40	MR
		Toll 76 - Ticket Mainline		Tyson's comer rower		
	11.94	TON TO - TICKET Mainine	Maintananaa	Llemoured		MD
	39.59		Maintenance/State Police	Gibsonia		MB EX (TR EMB SW/H) RE
	56.44		Interchange #57	Ditteburgh	C, LINKF12, F, HOF108, A	MB, EX-(11X, EWB, 3VVH), KF
	63.22		Maintenance	Harrison City	C E HCE48	MB
	67.22		Interchange #67	Irwin	C	MB
	75.39		Interchange #75	New Stanton	C	MB
	88.76		Maintenance	Donegal	C. F. HCF48, SMF6	MB. EX-(TR)
District 2	90.69		Interchange #91	Donegal	C	MB
	109.91		Interchange #110	Somerset	C	MB
	113.82		Maintenance/State Police	Somerset	C F HCF72 X	MB_EX-(TR) RE
	122.18		Training Center	West Training Center Trailer	C.X	RF
	122.18		Tunnel	Allegheny (West)	C, FO, X	RF
	123.34		Tunnel	Allegheny (East)	C, FO	
	132.32		Maintenance	Kegg	C	
	145.50		Interchange #146	Bedford	С	MB
	154.42		Maintenance/District Fares/State Police	Everett	C, F, HCF96, SMF24, SMF12	MB, EX-(EBMB, FB/WH, PSP, SWH)
	161.50		Interchange #161	Breezewood	C	
	179.44		Interchange #180	Fort Littleton	C	MB
	185.95		Maintenance	Burnt Cabins	C, SMF12	MB
	186.20		Tunnel	Tuscarora (West)	C, FO, SMF12	
	187.21		Tunnel	Tuscarora (East)	C, FO	
	188.59		Interchange #189	Willow Hill	C	MB
	197.48		Tunnel	Kittatinny (West)	C, FO	
	198.38		Tunnel	Kittatinny (East)	C, FO	
	198.50		Tunnel	Blue Mountain (West)	C, FO	
	199.32		Tunnel	Blue Mountain (East)	C, FO	
	201.29		Interchange # 201	Blue Mountain	C	MB

4 .	APPENDIX A Pennsylvania Turnpike Commission Distribution of Infrastructure Cabling Resources					
District Number	Mile Post Marker	Highway	Туре	Name Of Location	Types Of Cable	Miller Buildings - External - Wireless
District 3	214.27	Toll 76 - Ticket Mainline (cont)	Maintenance/State Police	Newville	C E HCE72 SME12 X	MB_EX-(TR)_RE
Company of the second second	226.54	Ten re Hener mannie (sent)	Interchange #226	Carliele	0	MB
	236.22		Interchange #236	Gettychurg Pike	C	IND
	241.87		Interchange #242	Harrishurg West/ District Fares	C	
THE REAL PROPERTY.	243.85		Maintenance	New Cumberland	CEX	EX (EMB RI) RE
	247.38		Interchange # 247	Harrisburg Fast	C SMEAR EHETIAA.(PT)	
	249 70		Central Office/State Police	PTC Administration Building	AC AF EHET144 FO X	EX -(CB TIP)
STATE TRANS	210.10		Turnpike Industrial Park Building	PTC Administration Building	C SME12 24 48 FHET144 FFT	EX - (GK CAB)
	265.54		Maintenance	Mt Gretna	C F HCE48	MB
A STAR DO DO DO	266.45	CONTRACTOR OF THE REAL PROPERTY OF THE REAL PROPERT	Interchange #266	Lebanon-Lancaster	C	
T. Start Barrier	286.09	The second s	Interchange #286	Reading-Lancaster	G	
1000000	288.33		District Maintenance/State Police	Bowmansville	C F HCE96 X	MB, EX-(TB), RF
	298.33	and the set of the set	Interchange #298	Morgantown	C	
a standard lines	311.93	The second second second second second	Interchange #312	Downingtown	C	A CONTRACTOR OF A CONTRACTOR O
District 4	316.26		Maintenance	Devault	C. F. SMF12	The second se
1.			Tower Site Miller Building	Valley Forge Tower	SME12	MB
	326.62		Interchange #326	Valley Forge	C	
	330.14		Regional/District Fares/State Police	Fastern Regional/District 4 Fares	C. FO. X	EX-(GK), RF
	333.28		Interchange #333	Norristown	C. FO	
	333.33		Interchange #20	Mid-County	C	
	333.59		District Maintenance	Plymouth Meeting	C, F, HCF108, SMF8, X	MB, EX-(EMB, EBMB, TB), RF
	338.36		Interchange #339	Ft. Washington	С	
	342.91		Interchange #343	Willow Grove	С	
	351.49		Interchange #351	Bensalem	С	
	353.05		Maintenance	Trevose	C, SMF6, SMF24	
	353.05		Trevose Tower Miller Building	Trevose	SMF6, SMF24	MB
	357.84		Interchange #358	Delaware Valley	С	MB
	358.11		Interchange #359	Delaware River Bridge	С	MB
District 5	And the second second	Toll 476 - Northeast Extension				
	30.13		Interchange #31	Lansdale	C	
	43.74		Maintenance	Quakertown	C, F, SMF12	
	43.77		Interchange #44	Quakertown	C, SMF12	EX-(MNT, TR)
	57.31		Interchange #56	Lehigh Valley	C	
	70.07		Maintenance/District Fares	Slatington	C, F, HCF108, SMF6	MB, EX-(FB)
	70.26		Training Center	Eastern Training Center Trailers	C, X	RF
1	70.26		Tunnel	Lehigh (South)	C, FO, X	RF
	71.56		Tunnel	Lehigh (North)	C, FO	
1	/5.86		Interchange #74	Mahoning Valley	С	MB
	94.59		Interchange #95	Pocono	С	
	94.64		District Maintenance/State Police/Whse	Pocono	C, F, HCF48, HCF108; SMF12	MB, EX-(EMB, SWH, TB, TR)
	105.44		Interchange #105	Wilkes-Barre	C, SMF12, X	MB, EX-(TR)
	114.45		Interchange #115	Wyoming Valley	C	
	114.56		Maintenance	Wyoming Valley	C, F, HCF48, SMF12	MB, EX-(EB)
	122.01		Interchange #122	Keyser Avenue	C	
	130.64		Interchange #131	Clarks Summit	C	
District 6	and a strend with	Interstate 376 - Beaver Valley Expressway		and many investigation in the second second	and shares have been a state of the	
The second second second	16.28		Interchange #B17	Mount Jackson Road	C	
	18.07		Interchange #B18	Mainline West Toll Plaza 18	C	
Station of Parking	19.96		Interchange #B20	Moravia	C	
No. of Contract of Street or Longer	28.79		Interchange #B29	Beaver Falls	C	
	30.50	THE REPORT OF THE OWNER WATER AND THE REPORT OF THE REPORT OF	Interchange #B30	Mainline East Toll Plaza 30	C.	And the second se

APPENDIX A Pennsylvania Turnpike Commission Distribution of Infrastructure Cabling Resources						
District	Mile Post Marker	Highway	Tuno	Name Of Location	Types Of Cable	Miller Buildings -
District 6 (cont)	Marker	Toll 576 - Southern Beltway	Type	Of Location	Or Cable	External - Wireless
	1.42		Unmanned Interchange #S2	Exit 2 US Route 30	C, LHRF96, SMF12	MB
	3.70		Unmanned Interchange #S4	Exit 4 Westport Road	C, LHRF96, SMF12	MB
	5.58		Unmanned Interchange #S6	Exit 6 US Route 22	C, LHRF96, SMF12	MB
		Toll 76 - Ticket Mainline				
	1.43	The second s	Interchange #2	Gateway Toll Plaza	C	
	10.70		Fare's Office #10	New Castle	C	
	31.00		Interchange #30	Warrendale	C	
	39.10		Interchange #39	Butler Valley	C, LHRF12	
	47.73		Interchange #48	Allegheny Valley	C	

Legend

С	COPPER (Primarily CAT6e Data)
AC	AMP COPPER (Primarily CAT3, CAT5e and CAT6e Data)
AF	PIRELLI AMP FIBER (Central Office Building, primarily 4 strand multimode and 24 strand single mode)
EFT	EDGE TRUNK FIBER (TIP Building Data Center and peripheral IDF's SM and multimode 50 um for inter-rack trunking - electronics cabinets)
EHFTxxx	EDGE HIGH COUNT BACKBONE FIBER xxx - number of strands (Single mode fiber connecting the Administration Buildings) - PT is pass through only
RF	RF Connection with coaxial cables, masts, Cisco bridges and antennas
F	STATION FIBER (Interior to a building to workstation jacks)
FO	FIBER OTHER (Primarily fiber in tunnels, from tower sites or other exterior facilities - may not be Corning)
HCFxxx	HIGH COUNT BACKBONE FIBER xxx = number of strands (Primarily multimode, 65 um, MTRJ to MTRJ between Maintenance and Miller Buildings)
LHRFxxx	LONG HAUL ROADWAY BACKBONE FIBER xxx = number of strands (Could be all single mode or a hybrid of single and multimode)
SMFxxx	SINGLE MODE BACKBONE FIBER xxx = number of strands (Primarily campus building to building fiber)
Х	COAXIAL
BMB	BLUE MILLER BUILDING(s) (MDF)
MB	MILLER BUILDING(s) (MDF)
EX	EXTERNAL BUILDING(s):

- CB = Communication Building EB = Engineering Building
- EBMB = External Blue Miller Building
- EMB = External Miller Building
- FB = Fares Building
- FB/WH = Fares Office Building and Warehouse
- GK = Groundskeeper Building
- RI = Radio Installation Building
- MNT = Maintenance Building
- PSP = Pennsylvania State Police Building
- SWH = Stores Warehouse
- TB = Tradesman Building
- TIP = Turnpike Industrial Park Administration Building
- TR = Trailer

	Product Use	Description	Part Number
Premise Fiber			
	CCH Panels	48-fiber MTP Connector Panel, Pretium Edge 48f MTP adapter panel, LOMMF	EDGE-CP48-E3
	CCH Panels	48-fiber MTP Connector Panel, Pretium Edge 48f MTP adapter panel, SMF APC	EDGE-CP48-90
		2-Fiber Riser, LC Uniboot/LC Uniboot Multimode Pretium® EDGE Solutions Jumper, OFNR (riser) 2.0 mm	
	Patch Cords	interconnect cable, Pretium 300 Solutions with Corning® ClearCurve® optical fiber	/9/9021D120002M
	Datab Carda	2-Fiber Riser, LC Uniboot/LC Uniboot Single-mode Pretium EDGE Solutions Jumper, OFNR (riser) 2.0 mm	70700000100000
	Paich Cords	interconnect cable, single-mode ultra-bendable fiber	787802GD120003W
	Potob Cordo	JUMPER 70-MTP 12F (PINNED) MM TO 70-MTP 12F (PINNED) MM, 12F RIB INTERCONNECT PLEN	7070127 18800021
	Facil Colus	CABLE MM ULTRABEND 300 50/125UMM, 3 METERS	7070121388000310
	Patch Cords	JUMPER 89-MTP 12F (PINNED) SM TO 89-MTP 12F (PINNED) SM, 12F RIB INTERCONNECT PLEN	808012P 1831003M
		INTERCONNECT SM SMF-28EF, 3 METERS	090912100010
	Universal Plug & Play Modules	Pretium® EDGE Solutions Modules, 50/125 µm multimode, Pretium® 300 Solutions with Corning®	FCM-UM12-05-93T
	oniversal ring a ring modules	ClearCurve® fiber with LC to (PINNED) MTP	E0W-0W12-00-001
	Universal Plug & Play Modules	Pretium® EDGE Solutions Modules, EDGE Universal Module, 12-fiber, Single-Mode Ultra-Bend 10.0, LC to	ECM-UM12-04-89G
	oniversal ring a ring modules	MTP Termination	
	LANscape Pretium EDGE Trunks (Pretium 300)	48F Pretium® EDGE Solutions Trunk Cables, Grip One End, 75 - MTP Low Loss (No Pins) MM to 75 - MTP	G757548TPNDDUxxxF
	—	Low Loss (No Pins) MM, xxx Feet, End 1 Furcation: D - 33", End 2 Furcation: D - 33"	
	LANscape Pretium EDGE Trunks (Pretium 300)	144F Pretium® EDGE Solutions Trunk Cables, Grip One End, 75 - MTP Low Loss (No Pins) MM to 75 - MTP	G7575E4TPNDDUxxxF
		Low Loss (No Pins) MM, xxx Feet, End 1 Furcation: D - 33", End 2 Furcation: D - 33"	
	Allegene Destine EDOE Temple (ON Liller Desideble)	24F Pretium® EDGE Solutions Trunk Cables, EDGE Trunk; U = Univ Trunk (U); G = Grip One End; 90 = SM,	
	LANSCAPE Pretium EDGE Trunks (SM Ultra-Bendable)	Non-Pinned MTP; $90 = SM$, Non-Pinned MTP; $24=024$ Fiber Cable -PN = Pienum/Non-Armored/Distribution;	G909024GPNDD0xxxF
		G = Single-mode XB; D = 33 Ribbon (+3/-0); D = 33 Ribbon (+3/-0); XXXFeet	
	ANscape Protium EDGE Trunks (SM Illtra Bondable)	46F Prelium® EDGE Solutions Trunk Cables, EDGE Trunk, 0 = Univ Trunk (0); G = Grip One End; 90 = Sivi,	
	LANSCAPE FIEllum EDGE Trunks (Sivi Olita-bendable)	Non-Printed WTP, $90 - 5W$, Non-Printed WTP, $40-040$ Fiber Cable -PN - Prenum/Non-Armored/Distribution,	G909046GPNDD0XXXF
		144E Pretium® EDGE Solutions Trunk Cables, EDGE Trunk: U = Univ Trunk (U): G = Grin One End: 90 =	
	ANscape Pretium EDGE Trunks (SM Ultra-Bendable)	SM Non-Pinned MTP: 90 = SM Non-Pinned MTP: E4=144Fiber Cable -PN = Plenum/Non-	
		Armored/Distribution: $G = Single-mode XB; D = 33" Ribbon (+3/-0"); D = 33" Ribbon (+3/-0"); xyyFeet$	
	Pretium® EDGE Solutions Housings	Pretium® EDGE Solutions Housing & Panel/module Canacity 1 Units High	EDGE-01U
	Pretium® EDGE Solutions Housings	Pretium® EDGE Solutions Housing, 48 Panel/module Capacity, 4 Units High	EDGE-010
		Plug & Play 24-fiber Universal Reduced Depth CCH Module: Single-Mode (SM) Shuttered LC Duplex to	
	Universal Plug & Play Modules	MTP. Standard Loss with Fiber/Port Silkscreen	CCH-UM24-04-89G
	PCH Rack Mount - strain-relief	KIT, Strain Relief Brkt, PCH-02U	PC2-STRN
	PCH Rack Mount - strain-relief	BKT, F/18 Size Zero RJ Clip, 7'FRAME	CDF-RJ18-BKT
	PCH Rack Mount Connector Housings	Pretium Connector Housing, 2 Panel Capacity, 1 Unit High	PCH-01U
	PCH Rack Mount Connector Housings	Pretium Connector Housing, 4 Panel Capacity, 2 Units High	PCH-02U
	PCH Rack Mount Connector Housings	Pretium Connector Housing, 12 Panel Capacity, 4 Units High	PCH-04U
	Universal Plug & Play Cables	Plug & Play, 144-fiber FREEDM Ribbon, SM. Terminated with 12F MTPs on both ends. No Grips	37UP901525-K00F 144F WBRR MTPA/MTPA
	Universal Plug & Play Cables	Plug & Play, 144-fiber FREEDM Ribbon, SM. Terminated with 12F MTPs on both ends. No Grips	37UP901529-S00F 144F WBRR MTPA/MTPA
	Ontical Splice Enclosures (OSE)	Wall mountable High Density OSE, supports 72 mass fusion fiber splices, 28 cable capacity, 12 OSE splice	
	Optical Optice Enclosures (OSE)	tray capacity	OSE-LD0-WT-1-L
	Optical Splice Enclosures (OSE)	Cable Entry Kit, 0.625 to 0.750 (15.9 to 19.0)	OSE-CBL-36
	Optical Splice Enclosures (OSE)	Cable Entry Kit, 0.500 to 0.625 (12.7 to 15.9)	OSE-CBL-35
	Optical Splice Enclosures (OSE)	Ribbon Termination Kit (includes 50ft of tubing, and 4 each of 6 position funnels)	SCF-KT-RTK
	Optical Splice Enclosures (OSE)	OSE Splice Tray, 6 mass fusion splice heat shrink capacity	OSE-ST-3
	Optical Splice Enclosures (OSE)	Fusion Splice Heat Shrink, RIBBON Fiber, 25 mm Length, 25 per Pack	2806031-012
	4-Fiber Cable from Closet to Desktop	Corning 4 strand (50um) MM fiber, plenum (MIC) Horizontal (Desktop) Fiber Cabling	004C88-31131-29
	4-Fiber Gable from Gloset to Desktop	Corning 4 strand (62.5um) MM fiber, plenum (MIC) Horizontal (Desktop) Fiber Cabling	004K88-31130-29

	Appendix B Pennsylvan	a Turnpike Commission Potential Part Specifications List - Approv	ed
	Product Use	Description	Part Number
se Fiber (cont)			
	4-Fiber Cable from Closet to Desktop	Corning 4 strand (62.5um) MM fiber, riser (MIC) Horizontal (Desktop) Fiber Cabling	004K81-31130-24
	Desktop Surface Mount Outlet for Fiber & Copper		
	Connectors	Corning Workstation Multimedia Outlet	WMO-85
	Desktop Single-gang Wall Plate Outlet for Fiber &		
	Copper Connectors	Corning Workstation Desk-Link Wall Outlet (DLS)	OR-40300575
	MTRJ Connector Outlet	Connectors for Desk-Link Wall Outlet - Fiber	189466
	MTRJ Connector Coupler for WMO	Corning, 2 port MT-RJ panel for WMO (50um)	WMO-CP02-G1-85
	MTRJ Connector Coupler for WMO	Corning, 2 port MT-RJ panel for WMO (62.5um)	WMO-CP02-97-85
	LC Connector Coupler for WMO	Corning, 2 port LC panel for WMO (50um)	WMO-CP02-A8-85
	LC Connector Coupler for WMO	Corning, 2 port LC panel for WMO (62.5um)	WMO-CP02-D3-85
	Closet Connector Coupler Hardware for Backbone &		
	Horizontal Cabling Terminations	Corning Closet Connector Housing - Handles up to 288 fibers w/MTRJ or LC coupler panels 19 " rack mount	CCH-04U
	Connector Housing	Corning Connector Housing 19" rack mount to interconnect cross connect fiber	CCH-02U
	Connector Housing	Corning 2U High Density Connector Housing	HDH-02U
	Connector Housing	Corning 1 U High Density Connector Housing	HDH-01U
	Kit for strain relief	One bracket and two universal cable clamps (UCCs) for cable strain relief	CPP-UCC-KIT
	MTRJ Coupler Panel for CCH Housing	Corning 24 fiber MT-RJ coupler panel (50um)	CCH-CP24-G1
	MTRJ Coupler Panel for CCH Housing	Corning 24 fiber MT-RJ coupler panel (62.5um)	CCH-CP24-97
	MTRJ Coupler Panel for CCH Housing	Corning 24 fiber MT-RJ coupler panel (SM)	CCH-CP24-98
	LC Coupler Panel for CCH Housing	Corning 24 fiber LC coupler panel (50um)	CCH-CP24-D3
	LC Coupler Panel for CCH Housing	Corning 24 fiber LC coupler panel (62 5µm)	CCH-CP24-A8
	LC Coupler Panel for CCH Housing	Corning 24 fiber I C coupler panel (SM)	CCH-CP24-A9
	MTRJ Pre-polished Connector	Corning MM MT-RJ connectors (50um)	92-051-97-P-F
	MTR.I Pre-polished Connector	Corning MM MT-RJ connectors (62.5 µm)	92-001-97-P-F
	MTR.I Pre-polished Connector	Corning MM MT-RL connectors (SM)	92-201-97-P-F
	L C Pre-polished Connector	Corning MM I/ C connectors (50µm)	95-050-98
	LC Pre-polished Connector	Corning MM LC connectors (62.5 µm)	95-000-98
	LC Pre-polished Connector	Corning MM LC connectors (SM)	95-200.98
	LC Pre-polished Connector	Corning MM LC/UPC connectors (SM)	95-200-99
	Termination for Single-mode Fiber	Corning Unicam SC SM connectors with Super PC Polish	
	Termination for Single-mode Fiber	Corning Unicam SC SM connectors with Super PC Polish	95-200-41
	Termination for Single-mode Fiber	Corning Onicam LC SM Connectors with Super PC Polish	93-200-96
	remination for Single-mode Fiber	Coming Anaerobic-Cured LC Sivi Connector With Ceramic Ferrule and Composite Hardware	95-201-965P
	Indeer Only Brokkeys Files Only to Due Datasey	Operating MIQ independent of the Add MAN (Add MAN) (Add Market Silding Filmer Dealth and (M. A. V.Y. Circlifer MM)	
	Indoor Only Backbone Fiber Cable to Run Between	Corning MIC indoor hybrid riser 48 fiber, 24(MM)/24(SM) Intrabuilding Fiber Backbone (X & XX Signifies MM	040204 704422 04
	Network Closets in a Riser	& SM fiber types, must specify standard 500m(Corning Infinicor 600) & standard SM(Corning SME-28e))	048881-131188-24
	Indeen Only Dealth and Filter Oakle to Day Dataset	Operations MIC in the set to fill an AC fill an AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
	Indoor Only Backbone Fiber Cable to Run Between	Corning MIC indoor hybrid riser 48 fiber, 24(MM)/24(SM) Intrabuilding Fiber Backbone (X & XX Signifies MM	
	Network Closets in a Plenum	& Sivi fiber types, must specify standard 500m(Corning Infinicor 600) & standard Sivi(Corning SiviF-28e))	048X88-13 11XX-29
	Indoor/Outdoor Backbone Fiber Cable to Run Between	Corning Freedom indoor(plenum)/outdoor 6, 12 or 24 fiber (XXX=Fiber Count) (X & XX=Fiber Type, MM/SM)	
	Network Closets in a Plenum	Interbuilding Fiber for Campus Backbone	<u>XXXX8P-331XX-29</u>
	Indoor/Outdoor Backbone Fiber Cable to Run Between	Corning Freedom indoor(riser)/outdoor 2-288 fiber (XXX=Fiber Count) (X & XX=Fiber Type, MM/SM)	
	Network Closets in a Riser	Interbuilding Fiber for Campus Backbone	XXXXWF-T41XXA20
	Kit to Terminating Outdoor & Indoor/Outdoor Fiber		
	Cable	Buffer Tube Fan-out Kits	FAN-BT25-06
	Kit to Terminating Outdoor & Indoor/Outdoor Fiber		
	Cable	Buffer Tube Fan-out Kits	FAN-BT25-12

State of the second second	Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved					
	Product Use	Description	Part Number			
Premise Fiber (cont)						
	4-Fiber Cable from Closet to Desktop	AMP/Pirelli 4-strand MM Fiber	502988-1			
	24-Fiber Intrabuilding	AMP/Pirelli 24-strand SM Fiber	503209-4			
Outside Plant Fiber						
	Indoor/Outdoor Backbone Fiber Cable to Run Between	12 Fiber Corning FREEDM One, (Tight Buffered Cable Design), Indoor/ Outdoor Riser SMFe 1.0/1.0/0.75				
	Campus Buildings	dB/km	012E8F-31131-29			
	Outdoor Only Fiber for Turnpike Backbone Cabling	Corning Altos All-Dielectric Cable, (XXX= Fiber Count), Single-mode, 0.4/0.3 dB/km Attenuation (current				
	(Long Haul Roadway and Campus Fiber)	installed 6 fiber, 12 fiber, 24 fiber and 96 fiber)	XXXEW4-T4101D20			
	Outdoor Only Fiber for ITS & Turnpike Backbone					
	Cabling (Long Haul/DWDM) for Lashed Aerial & Duct	Corning Altos Grp non-armoured outdoor 18 fiber hybrid with 12 single mode fibers and 6 - multimode fibers				
	Installations	62.5 um - 0 Infinicor 3.5/1.0 200/500	018XW4-T41XXA20			
	Backbone Fiber Cable (Long Haul/DWDM) to Run	Corning Altos Grp non-armoured outdoor 108 fiber hybrid with 96 single mode fibers and 12 - multimode				
	Along Road	fibers 62.5 um - 0 Infinicor 3.5/1.0 200/500	108XW4-T41XXD20			
	Outdoor Only Fiber for ITS & Turnpike Backbone	Corning Altos outdoor (lashed aerial & duct installations) 2-288 strand SM fiber (XXX=Fiber Count) Turnpike				
	Cabling for Lashed Aerial & Duct Installations	Operations Fiber Backbone	XXXRW4-T4101A20			
	Outdoor Only Fiber for ITS & Turnpike Backbone	Corning Altos Lite Single Armored outdoor (direct buried installations) 2-288 strand SM fiber (XXX=Fiber				
	Cabling for Direct Buried Installations	Count) Turnpike Operations Fiber Backbone	XXXRWC-T4101A20			
	Outdoor Only Fiber for ITS & Turnpike Backbone	Corning Altos Figure 8 outdoor 12-288 strand SM fiber Non-Armored (XXX=Fiber Count) Turnpike				
	Cabling for Figure 8 (Non-Armored) Aerial Installations	Operations Fiber Backbone	XXXRWA-T4101A20			
	Outdoor Only Fiber for ITS & Turnpike Backbone	Corning Altos Figure 8 outdoor 12-288 strand SM fiber Armored (XXX=Fiber Count) Turnpike Operations				
	Cabling for Figure 8 (Armored) Aerial Installations	Fiber Backbone	XXXRWB-T4101A20			
	Outdoor Only Fiber for ITS & Turnpike Backbone					
	Cabling (Long Haul/DWDM) for Lashed Aerial & Duct	Corning Altos outdoor (lashed aerial & duct installations) 2-288 strand SM fiber (XXX=Fiber Count,				
	Installations	XX=Specify Corning LEAF fiber for Long-haul Applications) Turnpike Operations Fiber Backbone	XXXRW4-T41XXA20			
	Outdoor Only Fiber for ITS & Turnpike Backbone					
	Cabling (Long Haul/DWDM) for Direct Buried	Corning Altos Lite Single Armored outdoor (direct buried installations) 2-288 strand SM fiber (XXX=Fiber				
	Installations	Count, XX=Specify Corning LEAF fiber for Long-haul Applications) Turnpike Operations Fiber Backbone	XXXRWC-141XXA20			
	Outdoor Only Fiber for ITS & Turnpike Backbone	Coming Alles Figure 0 subless 40,000 steered OM (it as New Almosted (VXV). Fit as Osciety XV - Osciety Coming				
	Cabling (Long Haul/DVDIVI) for Figure 8 (Non-Armored)	Corning Altos Figure 8 outdoor 12-288 strand SM fiber Non-Armored (XXX=Fiber Count, XX=Specify Corning				
	Aenai Installations	LEAF fiber for Long-naul Applications) Turnpike Operations Fiber Backbone	XXXRWA-141XXA20			
	Cabling (Long Houl/DW/DM) for Figure 8 (Armored)	Corning Alton Figure 8 outdoor 12 288 strend SM fiber Armored (XXX-Fiber Count, XX-Specify Corning				
	Aprial Installations	LEAE fiber for Long hould Applications) Turnpike Operations Fiber Backhone				
	Fiber Termination for Single mode	Corning Pigtail Assembly (Riser) MTR L (SM) 3 meters	008702R 1131003M			
	Fiber Termination for Single mode	Corning Pigtail Assembly (Riser) LC (SM) 3 meters	000201R2131003M			
	Coupler Panel for CCH Housing	Corning 6 fiber CCH coupler papel with 6 threaded ST 62 5um compatible (MM) adapters	CCH-CP06-15T			
	MTRJ Coupler Panel for CCH Housing	Corning 12 fiber CCH MT-R.I coupler panel with 12 MTR.I (SM) adapters	CCH-CP12-98			
		Corning 12-fiber SC duplex connector panel with six 568SC duplex adapters, single mode, ceramic insert				
	SC Coupler Panel for CCH Housing	composite housing	CCH-CP12-59			
	MTRJ Coupler Panel for CCH Housing	Corning 24 fiber MT-RJ coupler panel (SM)	CCH-CP24-98			
	LC Coupler Panel for CCH Housing	CCH Connector Panel with 6 LC, single-mode, Duplex Adapters. Composite Housing	CCH-CP12-A9			
	LC Coupler Panel for CCH Housing	Corning 24 fiber LC coupler panel (SM)	CCH-CP24-A9			
	Closet Splice Hardware for Outdoor Backbone Cabling					
	(Small)	Corning Closet Splice Housing - Handles up to (12) 0.2in splice trays (144 fiber splice capacity)	CSH-03U			

	Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved					
	Product Use	Description	Part Number			
Outside Plant Fiber (cont)						
	Closet Splice Hardware for Outdoor Backbone Cabling					
	(Large)	Corning Closet Splice Housing - Handles up to (22) 0 2in splice travs (264 fiber splice capacity)	CSH-05U			
	Splice Tray to House Outdoor Fiber Splices	Eusion Splice Tray (0.2") 12 Fiber Capacity, Heat Shrink, Type 2S	M67-048			
	Splice Tray to House Outdoor Fiber Splices	Splice tray for (12) heat shrink fusion splices	M67-081			
	Spice Tray to House Outdoor Fiber Splices	Splice tray for (12) heat shrink fusion splices	M67-110			
	Splice Tray to House Outdoor Fiber Splices	Splice tray for (24) heat shrink fusion splices	M67-112			
	Fiber Tool Kit	UniCam® Connector Tool Kit with continuity test system	TKT-UNICAM-CTS			
	Fiber Tool Kit	Sheath removal tool kit				
	Eiber Tool Kit	Fusion Splicing Tool Kit, includes all tools and supplies required for cable jacket removal and fusion splicing	M67.002			
	Fusion Splice Protection	Eusion Spligg Protection, Heat Shrinks 40mm long, package of 50				
	Closet Housing Hardware for Digtail Splicing	Splice Tray Proceed for DHC 0411 Corning closest connector rock mount housing	PC4 SPI C 12S			
	Closet Housing Hardware for Pigtall Splicing	Splice Tray Bracket for PHC-040 Coming closet connector rack mount housing				
	Closet Housing Hardware for Pigtall Splicing	Splice Tray Bracket for PHC-040 Coming closet connector fack mount housing				
	Outdoor Connector/Splice Hardware for Outdoor	Strain Relief Didcket for PCH-040	FC4-31RN			
	Backhone Cabling (Modium)	Environmental Distribution Center (NEWA 4X rated) 24 liber splice/adapter panel capacity (Ose for outdoor				
	Outdoor Connector/Splice Hardware for Outdoor	Environmentel Distribution Conter (NEMA 4X rated) 72 fiber enlige/adenter panel conseity (Lee for outdoor				
	Backhone Cabling (Medium)	Environmental Distribution Center (NEIWA 4X rated) 72 liber spice/adapter panel capacity (Ose for outdoor				
	Outdoor Connector/Splice Hardware for Outdoor	Environmental Distribution Center (NEMA 4X rated) 144 fiber splice/adapter papel capacity (Lise for outdoor				
	Backhone Cabling (Large)	fiber interconnect, need to add CCH counter nanels & splice trave)	FDC-12P-NH			
	backbolie Gabling (Large)	Corning 6 fiber EDC connector panel with 6. ST 62 5µm. (MM) adapters ST, ceramic insert, composite				
	ST Coupler Panel for EDC Housing	housing	FDC-CP1P-15			
	or occupion and for the foldering	Corning 12 fiber EDC connector panel with 568SC (SC dupley) adapters, ceramic insert, single-mode				
	SC Coupler Panel for EDC Housing - Maint	composite housing	EDC-CP1P-659			
	MTRJ Coupler Panel for FDC Housing	Corning 12 fiber EDC Coupler Panel with 12 MT-RJ (SM) adapters	FDC-CP1P-1298			
	Outdoor Fiber Splice Enclosure to Hold Splice Travs for					
	Outdoor Fiber Splices (Small)	Corning Fiber Splice Closure, preloaded with splice trays for 36 fiber splices	SCF-4C18-01-36			
	Outdoor Fiber Splice Enclosure to Hold Splice Travs for					
	Outdoor Fiber Splices (Medium)	Corning Fiber Splice Closure, preloaded with splice trays for 72 fiber splices	SCF-6C22-01-72			
	Outdoor Fiber Splice Enclosure to Hold Splice Trays for					
	Outdoor Fiber Splices (Large)	Corning Fiber Splice Closure, preloaded with splice trays for 144 fiber splices	SCF-6C28-01-144			
	Outdoor Fiber Splice Enclosure to Hold Splice Trays for					
	Outdoor Fiber Splices (Large)	3M Fiber Optic Splice Enclosure Case, with 96 Single Fusion Fiber Splice Capacity	2178-S			
	Outdoor Fiber Splice Enclosure components	3M Fiber Optic Splice Enclosure Cable Expansion Kit	2181-LS			
	Outdoor Fiber Splice Enclosure components	3M Fusion Splice Organizer Tray, holds 24 single fusion splices with 96 single fiber capacity	2524-FT			
	Fiber Termination	Corning 6 Fiber Pigtail Assembly with 6 ST 62.5um connectors, 3 Meters	005006K8130003M			
	Fiber Termination	Corning 6 Fiber SM Pigtail Assembly with 6 LC connectors, 3 Meters	000406RW425003M			
	Fiber Termination	Corning 12 Fiber Pigtail Assembly with 6 MTRJ Pinned SM connectors, 3 meters	008712R8131003M			
	Fiber Termination	Corning 12 Strand SM Pigtail with LC Connectors, 3 Meters	000412R8131003M			
	Fiber Termination	Corning 24 Strand SM Pigtail with LC Connectors, 3 Meters	000424RW425003M			
Rack Equipment	J					
	House panels and electronics	Ortronics, 7 ' open rack, black	OR-604004600			
	House panels and electronics	Ortronics, 12U Wall Mount Enclosure black	OR-40500089			
	House panels and electronics	Ortronics, 21U Wall Mount Enclosure black	OR-40500090			
	House panels and electronics	CPI F-Series Tera Frame Cabinet with sides 800MM	TS1007639			

	Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved				
	Product Use	Description	Part Number		
Rack Equipment (cont)					
	House panels and electronics	CPL E-Series Tera Frame Cabinet without sides 800MM	TS1007640		
	House panels and electronics	Hubbell Reboy 42 Inch 4 Hub Remote Equipment Cabinet, Pre-Configured	RE4X		
	House panels and electronics	Newton Instruments 7' Unfinished Aluminum Back for Tower Communication Buildings	NDR084190023		
	Cable management	Ortronics horizontal wire management - 11	<u>OB-808004759</u>		
	Cable management		OR-600004703		
	Cable management	Ortronics Vertical Cable Chase - double sided	OR-DVMS706		
	Cable management	AMP Horizontal Cable Management	559366-1		
	Cable management	AMP Vertical Cable Management	559400-1		
	House panels and electronics	Chatsworth 19" Relay Rack	55053-503		
Conner/Fiber/Component					
ooppen beroomponent	Premise and Campus Copper	Berk-Tek I ANMark 2000 (CAT6e), plenum, white	10033829		
	Premise and Campus Copper	Berk-Tek LANMark 2000 (CAT6e), plenum, blue	10033029		
	Premise and Campus Copper	Berk Tek LANMark 2000 (CAT6e), plendin, blue	10167/77		
	Premise and Campus Copper Premise and Campus Copper	Berk-Tek LANMark 350 (CAT5e), Iser, blue			
	Conner Termination Panel	Ortronics 48 port patch papel CAT5e			
	Copper Termination Workstation	Ortionics 4 o port patch panel, CATSe	OR 40400055		
	Copper Termination	Ortronics 4 poil surface mount box	OR 42100003		
	Copper Termination		OR 63750001		
	Copper Termination Workstation	Wiremold Pozol for Elect Pox Date//cice_ Package of 2 accommodates 4 Tree Lacks			
	Promise and Compute Copper	Park Tak LANMark 2000 (CAT6a), planum white	10033820		
	Copper Termination Workstation	Odranica Eccoplete, helde and icely. Ecc. White	OR 40200540		
	Copper Termination Workstation	Ortionics Faceplate, holds one jack - Poy White	OP 40300549		
	Copper Termination Workstation	Dock Link Wall Outlet EP. Tree look 4 port Fog White	OP 40300546		
	Copper Termination Workstation	Desk Link Wall Outlet FP, TracJack 4 port - Pog White	OR 40300546 13		
	Copper Termination Workstation	Look for Dook Link Wall Outlet Conner Traclook - For White			
	Copper Termination Workstation	Jack for Desk-Link Wall Outlet - Copper TracJack - Pog Willie	TI 600 12		
	Copper Termination Workstation	Jack for Desk-Link Wall Outlet - Copper TracJack - Ivory			
	Copper Termination Workstation	Jack for Desk-Link Wall Outlet - Copper TracJack - Dark Bide			
	Copper Termination Workstation	Jack for Desk-Link Wall Outlet - Copper TracJack - Dark Red			
		Mast Donn Oneir Conductor Coble with Chield 49 aug white			
		Alaba Mias 40 AMO 0 D OTD Objective OM Oable	3/55		
	GAI-Tronics Installations	Alpha Wire 18 AWG 9 P STR Shielded CM Cable	22490		
	GAI-Tronics Installations	Belden 18 AWG 9 P STR Shielded Plenum Cable	6347FF		
	GAL-Tronics Installations	Fork Terminal vinvlinsulated funnel entry 22-18 AWG #8 stud size	PV18-8F-C		
	Copper Termination Panel	Ortronics 48 port patch panel, Clarity CAT6, (6 port high density)	OR-PHD66U48		
	Copper Termination Panel	Ortronics 24 port patch panel, Clarity CAT6 (high density)	OR-PHD66U24		
	Copper Termination Workstation	Ortronics Cat 6 jack	234120		
	Voice Cable Termination	Marconi Type 66 Protection Block			
	Voice Cable Termination	Marconi Protection Module	6A20		
	Voice Cable	100 pair 24 awg cable	RUS Spec. PE-89		
	Premise and Campus Copper	AMP CAT5e	57825-6		
	Voice Cable	AMP 25 Pair CAT5	57815-2		
	Voice Cable	AMP 200 Pair CAT3	57319-1		
	Voice Cable	AMP 400 Pair CAT3	57328-1		
	Premise and Campus Copper	Eastern Cable Bundling	RFDI-PUILI		
	Copper Termination Panel	AMP 48-Port CAT5e Patch Panel	406331-1		
	Copper Termination Workstation	AMP CAT5e Jack	406372-1		

	Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved				
	Product Use	Description	Part Number		
Copper/Fiber/Com (cont)					
	Conner Termination Panel	AMP 24-Port MTR Patch Panel	1206704-4		
	Fiber Termination		1278303-2		
	Fiber Termination		1278415-1		
	Copper Termination Panel	AMP 24-Port CAT5 Patch Panel w/Amphenol Connectors	406214-1		
	Voice Cable Termination	AMP 48-Port CAT3 Patch Panel	558258-1		
	Voice Cable Termination	Siemon 50-Pair 66-Block			
	Voice Cable Termination	Siemon Mounting Bracket			
	Copper Termination Workstation	Connectors for Desk-Link Wall Outlet - Conner	189463		
Patch Cables			100400		
	Connor Patch	Ortropice 2 ft. Copper patch cards. Cat Fo. vollaw			
	Copper Patch	Ortronics, 5 ft. Copper patch cords, Cat 5e, grouv			
	Copper Patch	Ortronics, 5 ft. Copper patch cords, Cat 5e, gray			
	Copper Patch	Ortronics, 7 ft. Copper patch cords, Cat 5e, blue			
	Copper Patch	Ortronics, 9 ft. Copper patch cords, Cat 5e, violet			
	Copper Patch	Ortronics, 15 ft. Copper patch cords, Cat Se, red			
	Copper Patch	Ortronics, 25 ft. Copper patch cords, Cat Se, green	OR-837GTP8025DE-05		
	Copper Faich	Ontonics, 50 ft. Copper patch cords, Cat Se, orange	OR-037GTP0050DE-03		
	Voice lumper	Berk Tek, 20 ft. Copper patch cords, CAT 5e, Solid Conductor, Riser Rated, 4 Pr, 24 AVVG, RJ45-RJ45, Non-	M40405 000		
	Voice Jumper	Dooled, White			
	Voice Jumper	Compulink CAT 6, 568B, RJ45/OPEN PVC, Solid with no boots, white	13G00-BB/201-15		
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 3 feet, yellow	OR-MC603-04		
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 5 feet, gray			
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 7 feet, blue	OR-MC607-06		
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 9 feet, violet	OR-MC609-07		
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 15 feet, red			
	Copper Patch	Offronics Category 6, four pair, 24 AWG stranded, Patch Cable, 25 feet, green	OR-MC625-05		
	Copper Patch	Ortronics Category 6, four pair, 24 AWG stranded, Patch Cable, 50 feet, orange			
	Cross Over Cable Electronics	Offronics 8P8C 8P8C 2 PR, 4 P 24 G ST PVC CM EFP-350, Cross, 3 feet, orange	OR-801056316-3F1		
	Cross Over Cable Electronics	Offronics 8P8C 8P8C 2 PR, 4 P 24 G ST PVC CM EFP-350, Cross, 5 feet, orange	OR-801056316-5F1		
	Fiber Patch	Offronics, MTRJ - MTRJ Patch Cords (1 meter)	OR-61150D62001M22		
	Fiber Patch	Offronics, MTRJ - MTRJ Patch Cords (2 meter)			
	Fiber Patch	Corning, MTRJ - MTRJ Patch Cords (1 meter)	9/9/02KJ140001M		
	Fiber Patch	Corning SM Fiber Patch with SC Connectors 1 Meter	727202R5131001M		
	Fiber Patch	Corning Single Mode ST to SC Fiber Patch Cable 20 Feet	617202R5120020F		
	Fiber Patch	Corning SM LC to ST Fiber Patch, 10 Feet	046101R2131010F		
	Fiber Patch	Corning Sivi LC to ST Fiber Patch, 20 Feet	05050205820001M		
	Fiber Patch	50 um multimode LC to LC Fiber Patch Cables 1 Meter	05050255820001W		
	Fiber Patch	So um multimode LC to LC Fiber Patch Cable 3 Meter	055001/2144002M		
	Fiber Patch	Corning Wivi LC to ST Fiber Patch Cable 2 Weter	04040205120001M		
	Fiber Palch	Single Mode LC to LC Fiber SM Zip Cord 1 meter	040402R5120001W		
	Fiber Patch	Single Mode LC to LC Fiber SM Zip Cord 2 meter	040402R5120002IM		
	Fiber Patch	Single Wode LC to LC Fiber Stri Zip Cord TU meter			
	Fiber Patch	Single Wode LC to LC Fiber Patch Cable 1 Meter			
	Fiber Patch	Single Wode LC to LC Fiber Patch Cable 3 meter			
	Fiber Patch	Single Wode LC to LC Fiber Patch Cable 1 meter	040402KJ131001M		
	Fiber Palon	Single Wode LC to LC Fiber Patch Cable 2 Meter			
	Fiber Patch	Single Wode LC to LC Fiber Patch Cable 1 meter, Anixter			
		Single Mode LC to LC Fiber Patch Cable 2 meter, Anixter	LCCLCCD2-SM		

Street Total Statements	Appendix B Pennsylvania Turnpike Commission Potential Part Specifications List - Approved				
	Product Use	Description	Part Number		
Patch Cables (cont)					
	Fiber Patch	Single Mode LC to LC Fiber Patch Cable 3 meter, Anixter	LCCLCCD3-SM		
RF Coaxial Cable					
	Wireless Connections	Cisco Aironet Low-Loss Antenna Cable - 20 ft	AIR-420-003346-020		
	Wireless Connections	Cisco Aironet Low-Loss Antenna Cable - 50 ft	AIR-420-003346-050		
	Wireless Connections	Cisco Aironet Low-Loss Antenna Cable - 75 ft	AIR-420-003346-075		
	Wireless Connections	Cisco Aironet Low-Loss Antenna Cable - 100 ft	AIR-420-003346-100		
	Wireless Connections	Low-Loss Antenna Cable for 150 foot or less	LMR-400		
	Wireless Connections	Low-Loss Antenna Cable - 150 foot plus	LMR-600		
Cable Tray					
	CAB Main IDF and JH Communication Building Trav	Chatsworth Runway End Cap (pr)	10642-001		
	CAB Main IDF and JH Communication Building Trav	Chatsworth 24 " Wide Black Ladder Runway (9' 11 1/2")	10250-724		
	CAB Main IDF and JH Communication Building Trav	Chatsworth Ladder Runway	10250-718		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Junction Splice	11302-701		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Butt Splice	11301-001		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Butt Splice	11301-701		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Drop Out	12101-701		
	CAB Main IDF and JH Communication Building Tray	Chatsworth 3/8" All Thread Bolts	11408-001		
	CAB Main IDF and JH Communication Building Tray	3/8" All Thread Rods	11440-003		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Support Bracket	10607-002		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Wall Support	11421-718		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Cabinet Elevation	10506-716		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Dbl. Rack Cabling Section (Vertical Management)	11729-703		
	CAB Main IDF and JH Communication Building Tray	Chatsworth Cable Retaining Post	10596-708		
	TIP Section C Pathway Cable Tray	Cabofil 4 X 12 Cable Tray (12" wide by 4" deep by 10' long)	CF105/300EZ		
	TIP Section C Pathway Cable Tray	Cabofil 4 X 16 Cable Tray (16" wide by 4" deep by 10' long)	CF105/400EZ		
Electrical					
	Miller Building/Server Room/Comm Bldg	20 AMP, 125 Volt Twist Lock Receptacle with mating plug	HBL2310		
	Miller Building/Server Room/IDE/Comm Bldg	Geist Mfg., 66 inch, Vertical Rack 20 outlet, 125 volt, 20 amp, Power Strip, with 10 ft. cord, black with twist	VRTBN200-10210TL		
		Geist Mfg., 66 inch. Vertical Rack 20 outlet, 125 volt, 20 amp. Power Strip, with 10 ft. cord, black with twist			
	Miller Building/Server Room/IDF/Comm Bldg	lock	VRIBN200-10210		

Addendum No. 1

RFP # 11-10350-2964

Infrastructure Cabling Maintenance and Communication Systems Installation

Prospective Respondents: You are hereby notified of the following information in regard to the referenced **RFP**:

Following are the answers to questions submitted in response to the above referenced RFP up to and including questions submitted during the Pre-Proposal Conference on **March 1, 2011**. All of the questions have been listed verbatim, as received by the Pennsylvania Turnpike Commission.

 Can a contractor use a subcontractor to fulfill part of the required certifications? Example: Contractor holds all the certifications except for NetClear warranty. Ortronics is not willing to add another certified contractor – can this be subbed out?

Answer: The contactor may use subcontractors to provide the required certifications. The subcontractors and any of their personnel that will be used during the contract must be identified in the RFP response and clearly identified as subcontractor employees. The subcontractor personnel's qualifications must be included with the proposal response and clearly identified as subcontractor information. The contractor must show that the subcontractor's personnel are current in training and certification. In addition the contractor must adhere to the rules and requirements set forth by the warranting authority regarding a subcontractor being used to provide a warranty. All subcontractors must be approved by the Commission prior to executing a contract. If approved, the contractor must provide proof to the Turnpike's Project Manager that all warranty rules and requirements are met throughout the term of the contract each time the subcontractor is used.

2. 8 copies of Technical submittal are required, are 8 copies of the cost submittal also required?

Answer: Yes. Include 8 copies of each.

3. Is the Insurance information need to be included with the bid?

Answer: Yes. All insurance information should be included in your proposal response.

CLARIFICATION:

During the Pre-Proposal Conference, it was stated that the Proposal are due in the Contracts Administration Department by 12:00 PM, Monday, March 21, 2011. The Proposals are due in the Contracts Administration Department by 12:00 P.M., Tuesday, March 15, 2011 as originally stated in Section I-11 of the RFP.

All other terms, conditions and requirements of the original RFP dated **February 18, 2011** remain unchanged unless modified by this Addendum.

SIGN-IN SHEET

DATE: March, 01, 2011

PREPROPOSAL CONFERENCE RFP #11-10350-2964

TIME: 10:00 AM

	COMPANY NAME	REP NAME	ADDRESS	PHONE	EMAIL	
	Henkels & Mc Coy Inc	Jomie Berrier	5230 N Susquehanna Trail, York PA 1745	717-266-5641	J Berrier & henkels, Com	
2	I. B. Abel Inc.	Jim Trebilcock	620 Edgar St York Pr. 17403	717 - 845 - 1639	Simte ib -abelicon	
ω	Graybar	Melissa Cornell	1039 S. 13th St. Harrisburg, PA 17104	E12-260-6712	melissa, cornell@graybar.com	
4	Pt. Brecze Communications	Kim Butesfalu	1417 State Rt. 118 Sweet Valley PM. 18656	570-477-3257	pbc@epix.net	
თ	VERIZON	RICH BARKER	1717 ARCH ST. PHILA, PA	610-304-560	4 richard.barker@	ځ
ი	PTC	Stephanie Wewburg	POBOX 67676 HEG PA 17106	(139 9551	Snowburg Oportuenpik do	3
7	PTC	Wanda Metaur	и и и	1, 11	W metzgen o la tumpila. u	6 M
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