



**State of Oklahoma
Office of State Finance
Information Services Division**

Solicitation

1. Solicitation#: OCAN Fiber

2. Solicitation Issue Date: 09/28/2011

3. Brief Description of Requirement:

This solicitation is for the acquisition of specific Loose Tube Fiber Optic Cable meeting the requirements and specifications outlined below. The resulting contracts may be to multiple vendors if it is in the best interest of the state.

4. Response Due Date: 10/27/2011

Time: 5:00PM CST

5. Issued By and Return Sealed Bid To:

**Office of State Finance
3115 N. Lincoln Blvd.
Oklahoma City, OK 73105**

6. Contracting Officer:

Name: Gary Rowland

Phone: (405)

Email: gary.rowland@osf.ok.gov



**State of Oklahoma
Department of Central Services
Central Purchasing Division**

**Certification for Competitive
Bid and/or Contract
(Non-Collusion Certification)**

NOTE: A certification shall be included with any competitive bid and/or contract exceeding \$5,000.00 submitted to the State for goods or services.

Solicitation or Purchase Order #: OCAN Fiber

Supplier Legal Name: _____

SECTION I [74 O.S. § 85.22]:

A. For purposes of competitive bid,

1. I am the duly authorized agent of the above named bidder submitting the competitive bid herewith, for the purpose of certifying the facts pertaining to the existence of collusion among bidders and between bidders and state officials or employees, as well as facts pertaining to the giving or offering of things of value to government personnel in return for special consideration in the letting of any contract pursuant to said bid;
2. I am fully aware of the facts and circumstances surrounding the making of the bid to which this statement is attached and have been personally and directly involved in the proceedings leading to the submission of such bid; and
3. Neither the bidder nor anyone subject to the bidder's direction or control has been a party:
 - a. to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding,
 - b. to any collusion with any state official or employee as to quantity, quality or price in the prospective contract, or as to any other terms of such prospective contract, nor
 - c. in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract.

B. I certify, if awarded the contract, whether competitively bid or not, neither the contractor nor anyone subject to the contractor's direction or control has paid, given or donated or agreed to pay, give or donate to any officer or employee of the State of Oklahoma any money or other thing of value, either directly or indirectly, in procuring this contract herein.

SECTION II [74 O.S. § 85.42]:

For the purpose of a contract for services, the supplier also certifies that no person who has been involved in any manner in the development of this contract while employed by the State of Oklahoma shall be employed by the supplier to fulfill any of the services provided for under said contract.

The undersigned, duly authorized agent for the above named supplier, by signing below acknowledges this certification statement is executed for the purposes of:

the competitive bid attached herewith and contract, if awarded to said supplier;

OR

the contract attached herewith, which was not competitively bid and awarded by the agency pursuant to applicable Oklahoma statutes.

Supplier Authorized Signature

Certified This Date

Printed Name

Title

Phone Number

Email

Fax Number



**State of Oklahoma
Department of Central Services
Central Purchasing**

Responding Bidder Information

*"Certification for Competitive Bid and Contract" **MUST** be submitted along with the response to the Solicitation.*

1. **RE: Solicitation #** OCAN Fiber

2. **Bidder General Information:**

FEI / SSN : _____ VEN ID: _____
Company Name: _____

3. **Bidder Contact Information:**

Address: _____
City: _____ State: _____ Zip Code: _____
Contact Name: _____
Contact Title: _____
Phone #: _____ FAX#: _____
Email: _____ Website: _____

4. **Oklahoma Sales Tax Permit¹:**

- YES – Permit #: _____
- NO – Exempt pursuant to Oklahoma Laws or Rules

5. **Registration with the Oklahoma Secretary of State:**

- YES - Filing Number: _____
- NO - Prior to the contract award, the successful bidder will be required to register with the Secretary of State or must attach a signed statement that provides specific details supporting the exemption the supplier is claiming (www.sos.ok.gov or 405-521-3911).

6. **Workers' Compensation Insurance Coverage:**

Bidder is required to provide with the bid a certificate of insurance showing proof of compliance with the Oklahoma Workers' Compensation Act.

- YES – include a certificate of insurance with the bid
- NO - attach a signed statement that provides specific details supporting the exemption you are claiming from the Workers' Compensation Act (Note: Pursuant to Attorney General Opinion #07-8, the exemption from 85 O.S. 2001, § 2.6 applies only to employers who are natural persons, such as sole proprietors, and does not apply to employers who are entities created by law, including but not limited to corporations, partnerships and limited liability companies.)²

Authorized Signature

Date

¹ For frequently asked questions concerning Oklahoma Sales Tax Permit, see <http://www.tax.ok.gov/faq/faqbussales.html>

² For frequently asked questions concerning workers' compensation insurance, see http://www.ok.gov/oid/Consumers/Workers'_Compensation_Information.html

Printed Name

Title



TABLE OF CONTENTS

| | | |
|-------|---|----|
| A. | GENERAL PROVISIONS | 3 |
| A.1. | Definitions | 3 |
| A.2. | Offer Submission..... | 3 |
| A.3. | Solicitation Amendments..... | 4 |
| A.4. | Offer Change..... | 4 |
| A.5. | Certification Regarding Debarment, Suspension, And Other Responsibility Matters | 4 |
| A.6. | Offer Public Opening..... | 5 |
| A.7. | Offers Subject To Public Disclosure..... | 5 |
| A.8. | Late Offer | 5 |
| A.9. | Legal Contract..... | 5 |
| A.10. | Pricing..... | 5 |
| A.11. | Manufacturers' Name And Approved Equivalents..... | 5 |
| A.12. | Clarification of Solicitation | 5 |
| A.13. | Rejection of Offer | 5 |
| A.14. | Award of Contract | 6 |
| A.15. | Contract Modification | 6 |
| A.16. | Delivery, Inspection and Acceptance | 6 |
| A.17. | Invoicing and Payment..... | 6 |
| A.18. | Tax Exemption | 6 |
| A.19. | Audit and Records Clause..... | 6 |
| A.20. | Non-Appropriation Clause | 7 |
| A.21. | Choice of Law | 7 |
| A.22. | Choice of Venue..... | 7 |
| A.23. | Termination for Cause..... | 7 |
| A.24. | Termination for Convenience | 7 |
| A.25. | Insurance | 7 |
| A.26. | Employment Relationship..... | 7 |
| A.27. | Compliance With The Oklahoma Taxpayer And Citizen Protection Act Of 2007..... | 8 |
| A.28. | Compliance With Applicable Laws | 8 |
| A.29. | Gratuities..... | 8 |
| A.30. | Preclusion From Resulting Contracts..... | 8 |
| A.31. | Mutual Responsibilities..... | 8 |
| A.32. | Background Checks and Verifications..... | 8 |
| A.33. | Confidentiality..... | 8 |
| A.34. | Unauthorized Obligations..... | 8 |
| A.35. | Electronic and Information Technology Accessibility..... | 8 |
| A.36. | Patents and Copyrights..... | 9 |
| A.37. | Federal Terms and Conditions | 9 |
| A.38. | Assignment | 10 |
| A.39. | Severability..... | 10 |
| A.40. | Failure to Enforce..... | 10 |
| A.41. | Licensed Software..... | 10 |
| A.42. | Contract..... | 10 |
| A.43. | Conflict of Interest | 10 |
| A.44. | Limitation of Liability..... | 10 |
| A.45. | Media Ownership (Disk Drive and/or Memory Chip Ownership) | 11 |
| A.46. | Offshore Services..... | 11 |
| A.47. | Failure To Provide..... | 11 |



**State of Oklahoma
Office of State Finance
Information Services Division**

Solicitation

| | | |
|-------|--|----|
| A.48. | Agency Policies..... | 11 |
| A.49. | Compliance With Technology Policies | 11 |
| A.50. | Emerging Technologies..... | 11 |
| A.51. | Ownership Rights..... | 11 |
| A.52. | Right of Use | 11 |
| A.53. | Source Code Escrow – Reference Title 62 O.S. § 34.31 | 12 |
| A.54. | Proposal Clarification Questions | 12 |
| A.55. | Performance and Upgrades | 12 |
| A.56. | Right to Renegotiate | 12 |
| A.57. | Publicity..... | 12 |
| A.58. | Mandatory and Non-Mandatory Terms | 13 |
| A.59. | Special Provisions | 13 |
| B. | SPECIAL PROVISIONS | 14 |
| B.1. | Contractors and Sub-Contractors Obligations..... | 14 |
| B.2. | Warrants..... | 14 |
| B.3. | Ordering | 14 |
| C. | SOLICITATION SPECIFICATIONS..... | 15 |
| C.1. | Overview | 15 |
| C.2. | Requirements..... | 15 |
| C.3. | General Information | 15 |
| C.4. | Alternate Cable | 15 |
| C.5. | Cable Design Specifications..... | 15 |
| C.6. | Cable Construction..... | 16 |
| C.7. | Jacket Print & Cable Packaging..... | 17 |
| C.8. | Reels | 18 |
| C.9. | Mechanical & Environmental Testing | 18 |
| C.10. | Quality Control | 20 |
| C.11. | Standard Single-Mode Fiber Specifications (ITU-TG.652D)..... | 20 |
| C.12. | Non-Zero, Dispersion-Shifted, Medium Dispersion Fiber (ITU-T G.655, G.656) | 22 |
| D. | EVALUATION..... | 25 |
| D.1. | Evaluation and Award | 25 |
| D.2. | Competitive Negotiations of Offers..... | 25 |
| D.3. | Selection Criteria..... | 25 |
| D.4. | Evaluation | 25 |
| E. | INSTRUCTIONS TO OFFEROR | 27 |
| E.1. | Introduction | 27 |
| E.2. | Preparation of Offer..... | 27 |
| E.3. | Submission of Offer..... | 27 |
| E.4. | Explanation to Offeror | 27 |
| E.5. | P-Cards | 27 |
| E.6. | Deliverables | 27 |
| E.7. | Notice of Award..... | 28 |

A. GENERAL PROVISIONS

The following provisions shall apply where applicable to the solicitation.

A.1. Definitions

As used herein, the following terms shall have the following meaning unless the context clearly indicates otherwise:

- A.1.1.** "Acquisition" means items, products, materials, supplies, services and equipment a State agency acquires by purchase, lease purchase, lease with option to purchase, or rental pursuant to the Oklahoma Central Purchasing Act;
- A.1.2.** "Addendum" means a written modification to a contract.
- A.1.3.** "Alteration" means a modification an offeror makes to a solicitation response prior to the response due date.
- A.1.4.** "Alternate or alternative offer" means an offer, which contains an intentional substantive variation to a basic provision, specification, term or condition of the solicitation.
- A.1.5.** "Amendment" means a written change, addition, correction, or revision to a solicitation made by the state agency responsible for making the acquisition.
- A.1.6.** "Bid" means an offer in the form of a bid, proposal or quote an offeror submits in response to a solicitation;
- A.1.7.** "Bidder" means an individual or business entity that submits a bid or proposal in response to an invitation to bid or a request for proposal. When used in this Chapter, bidder is synonymous with a "supplier", "vendor", or "offeror" responding to a solicitation.
- A.1.8.** "Business Entity" means any individual, business, partnership, joint venture, corporation, S-corporation, limited liability corporation, limited liability partnership, limited liability limited partnership, sole proprietorship, joint stock company, consortium, or other legal entity recognized by statute;
- A.1.9.** "COTS" means Commercial off the Shelf.
- A.1.10.** "Contract" means the final agreement under which the services and/or products shall be governed.
- A.1.11.** "Contractor" means the Business Entity with whom the State enters into this contract.
- A.1.12.** "Closing Date" is the date the RFP closes, also proposal opening date, and response due date;
- A.1.13.** "Government Entities" means State Agencies, Boards, Commissions, Authorities, Oklahoma Counties, Cities, Schools, Hospitals, Regents of Higher Education, Colleges, Universities, Municipalities, or political subdivisions;
- A.1.14.** "Offer" shall be synonymous with "bid", "proposal", "quote" or other similar term;
- A.1.15.** "Offeror" shall be synonymous with "vendor", "bidder", or other similar term;
- A.1.16.** "Procuring Agency" means the State of Oklahoma Agency initiating the procurement.
- A.1.17.** "Request for Information or RFI" means a non-binding procurement practice used to obtain information, comments, and feedback from interested parties or potential suppliers prior to issuing a solicitation.
- A.1.18.** "State" means the government of the State of Oklahoma, its employees and authorized representatives, including without limitation any department, agency, or other unit of the government of the State of Oklahoma. References to "State" in this document refer to either the Department of Central Services or the Office of State Finance.
- A.1.19.** "State Agency" includes any office, officer, bureau, board, counsel, court, commission, institution, unit, division, body, or house of the executive or judicial branches of the State government, whether elected or appointed, excluding only political subdivisions of the State.
- A.1.20.** "State CIO" is the State Chief Information Officer, as used herein the CIO has the same authority as the State Purchasing Director for all IT and Telecommunications purchasing and are used interchangeably.
- A.1.21.** "Solicitation" means a request or invitation by the State Purchasing Director or a State agency for an offeror to submit a priced offer to sell acquisitions to the State. A solicitation may be an invitation to bid, request for proposal, or a request for quotation;

A.2. Offer Submission

- A.2.1.** Submitted offers shall be in strict conformity with the instructions to offeror, and shall be submitted with a completed "Responding Bidder Information" DCS-FORM-CP-076, and any other forms completed as required by the solicitation.

- A.2.2.** Offers shall be submitted to the State Agency identified in the front page of this solicitation, in a single envelope, package, or container and shall be sealed. The name and address of the offeror shall be inserted in the upper left corner of the single envelope, package, or container. SOLICITATION NUMBER AND SOLICITATION RESPONSE DUE DATE AND TIME MUST APPEAR ON THE FACE OF THE SINGLE ENVELOPE, PACKAGE, OR CONTAINER.
- A.2.3.** The required certification statement, "Certification for Competitive Bid and/or Contract (Non-Collusion Certification)", DCS-FORM-CP-004, must be made out in the name of the offeror and must be properly executed by an authorized person, with full knowledge and acceptance of all its provisions.
- A.2.4.** All offers shall be legibly written or typed. Any corrections to offers shall be initialed. Pencil bids and pencil corrections shall NOT be accepted and shall be rejected as non-responsive.
- A.2.5.** All offers submitted shall be subject to the Oklahoma Central Purchasing Act, the Central Purchasing Rules, the Information Services Act and other statutory regulations as applicable, these General Provisions, any Special Provisions, solicitation specifications, required certification statement, and all other terms and conditions listed or attached herein, all of which are made part of this solicitation.
- A.2.6.** By submitting a proposal, contractor agrees not to make any claims for damages or have any rights to damages, because of any misunderstanding or misrepresentation of the specifications or because of any misinformation or lack of information.
- A.2.7.** If a contractor fails to notify the State of an error, ambiguity, conflict, discrepancy, omission or other error in the SOLICITATION, known to the contractor, or an error that reasonably should have been known by the contractor, the contractor shall submit an proposal at its own risk; and if awarded the contract, the contractor shall not be entitled to additional compensation, relief, or time, by reason of the error or its later correction. If a contractor takes exception to any requirement or specification contained in the SOLICITATION, these exceptions must be clearly and prominently stated in their response.

A.3. Solicitation Amendments

- A.3.1.** If an "Amendment of Solicitation", DCS-FORM-CP-011 (or other format as provided), is issued, then the offeror shall acknowledge receipt of any/all amendment(s) to solicitations by signing and returning the solicitation amendment(s). Amendment acknowledgement(s) may be submitted with the offer or may be forwarded separately. If forwarded separately, amendment acknowledgement(s) must contain the solicitation number and response due date and time on the front of the envelope. The State must receive the amendment acknowledgement(s) by the response due date and time specified for receipt of bids for the offer to be deemed responsive. Failure to acknowledge solicitation amendments may be grounds for rejection.
- A.3.2.** No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in the solicitation. All amendments to the solicitation shall be made in writing by the Central Purchasing Division or OSF.
- A.3.3.** It is the contractor's responsibility to check the State's website frequently for any possible amendments that may be issued. The State is not responsible for the contractor's failure to download any amendment documents required to complete a solicitation.

A.4. Offer Change

If the offeror needs to change an offer prior to the solicitation response due date, a new offer shall be submitted to the State with the following statement "This offer supersedes the offer previously submitted" in a single envelope, package, or container and shall be sealed. The name and address of the offeror shall be inserted in the upper left corner of the single envelope, package, or container. SOLICITATION NUMBER AND SOLICITATION RESPONSE DUE DATE AND TIME MUST APPEAR ON THE FACE OF THE SINGLE ENVELOPE, PACKAGE, OR CONTAINER.

A.5. Certification Regarding Debarment, Suspension, And Other Responsibility Matters

By submitting an offer to this solicitation:

- A.5.1.** The prospective primary participant and any subcontractor certifies to the best of their knowledge and belief, that they and their principals or participants:
 - A.5.1.1.** Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal, State of Oklahoma or local department or agency;
 - A.5.1.2.** Have not within a three-year period preceding this solicitation been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) contract; or for violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

- A.5.1.3.** Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph A.5.1.2. of this certification; and
- A.5.1.4.** Have not within a three-year period preceding this solicitation had one or more public (Federal, State or local) contracts terminated for cause or default.
- A.5.2.** Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to its offer.

A.6. Offer Public Opening

Sealed offers MAY BE OPENED UPON PUBLIC REQUEST, by the requesting agency identified in the front page of this solicitation, at the time and date specified in the solicitation as Response Due Date and Time.

A.7. Offers Subject To Public Disclosure

Unless otherwise specified in the Oklahoma Open Records Act, Central Purchasing Act, or other applicable law, documents and information an offeror submits as part of or in connection with an offer are public records and subject to disclosure. Offerors claiming any portion of their offer as proprietary or confidential must specifically identify what documents or portions of documents they consider confidential and identify applicable law supporting their claim of confidentiality. The State Purchasing Director or the Chief Information Officer shall make the final decision as to whether the documentation or information is confidential pursuant to 74 O.S. §85.10.

A.8. Late Offer

Offers received by the State after the response due date and time shall be deemed non-responsive and shall NOT be considered for any resultant award.

A.9. Legal Contract

- A.9.1.** Submitted offers are rendered as a legal offer and when accepted by the State, shall constitute a contract.
- A.9.2.** The contract resulting from this solicitation shall consist of the following documents in order of preference: State of Oklahoma Statutes, contract award documents, including but not limited to the Purchase Order, Contract Modifications, required certification statement, and change orders; the solicitation including any amendments; and the successful offer to the extent that the offer does not conflict with the requirements of the contract award documents or solicitation or applicable law. In the event there is a conflict between any of the preceding documents, the contract award documents prevail over the solicitation, and both the contract award documents and the solicitation shall prevail over the successful offer.
- A.9.3.** Any contract(s) awarded pursuant to the solicitation shall be legibly written or typed.

A.10. Pricing

- A.10.1.** Offers shall remain firm for a minimum of one-twenty (120) days from the solicitation closing date.
- A.10.2.** Offerors guarantee unit prices to be correct.
- A.10.3.** In accordance with 74 O.S. §85.40, ALL travel expenses to be incurred by the contractor in performance of the contract shall be included in the total bid price/contract amount.
- A.10.4.** All costs incurred by the offerors for proposal preparation and participation in this competitive procurement shall be the sole responsibility of the offerors. The State of Oklahoma shall not reimburse any offeror for any such costs.

A.11. Manufacturers' Name And Approved Equivalent

Unless otherwise specified in the solicitation, manufacturers' names, brand names, information, and/or catalog numbers listed in a specification are for information and not intended to limit competition. Offeror may offer any brand for which they are an authorized representative, which meets or exceeds the specification for any item(s). However, if offers are based on equivalent products, indicate on the offer form the manufacturer's name and number. Offeror shall submit sketches, descriptive literature, and/or complete specifications with their offer. Reference to literature submitted with a previous offer shall not satisfy this provision. The offeror shall also explain in detail the reason(s) why the proposed equivalent will meet the specifications and not be considered an exception thereto. Offers that do not comply with these requirements are subject to rejection.

A.12. Clarification of Solicitation

Clarification pertaining to the contents of this solicitation shall be directed in writing to the Contracting Officer specified in the solicitation.

A.13. Rejection of Offer

The State reserves the right to reject any offers that do not comply with the requirements and specifications of the solicitation. An offer may be rejected when the offeror imposes terms or conditions that would modify requirements of the solicitation or limit the

offeror's liability to the State. Other possible reasons for rejection of offers are listed in OAC 580:16-7-32(h).

Attempts to impose unacceptable conditions on the State, or impose alternative terms not in the best interest of the State shall not be tolerated. Continued attempts to impose unacceptable conditions or terms on the State shall result in a determination of your non-responsiveness of your offer due to the lack of compliance with the terms and conditions of negotiation or the solicitation.

A.14. Award of Contract

- A.14.1.** The State may award the contract to more than one offeror by awarding the contract(s) by item or groups of items, or may award the contract on an ALL OR NONE basis, whichever is deemed by the State to be in the best interest of the State of Oklahoma.
- A.14.2.** Contract awards shall be made to the lowest and best offer(s) unless the solicitation specifies that best value criteria is being used.
- A.14.3.** In order to receive an award or payments from the State of Oklahoma, vendor must be registered. The vendor registration process can be completed electronically through the DCS website at the following link: <https://www.ok.gov/dcs/vendors/index.php>.
- A.14.4.** It is the preference of the State to award to a single vendor. However, the State reserves the right to award to multiple vendors when it has been determined to be in the best interest of the State.

A.15. Contract Modification

- A.15.1.** The contract issued as a result of this solicitation is under the authority of the State personnel signing the Contract. The contract may be modified only through a written Contract Modification, signed by the State.
- A.15.2.** Any change to the contract, including the addition of work or materials, the revision of payment terms, or the substitution of work or materials, directed by a person who is not specifically authorized by the Central Purchasing Division or the Office of State Finance in writing, or made unilaterally by the contractor, is a breach of the contract. Unless otherwise specified by applicable law or rules, such changes, including unauthorized written Contract Modifications, shall be void and without effect, and the contractor shall not be entitled to any claim under a contract based on those changes. No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in the resultant contract.

A.16. Delivery, Inspection and Acceptance

- A.16.1.** Unless otherwise specified in the solicitation or awarding documents, all deliveries shall be F.O.B. Destination. The contractor shall prepay all packaging, handling, shipping and delivery charges and firm prices quoted in the offer shall include all such charges. All products and/or services to be delivered pursuant to the contract shall be subject to final inspection and acceptance by the State at destination. "Destination" shall mean delivered to the receiving dock or other point specified in the purchase order. The State assumes no responsibility for goods until accepted by the State at the receiving point in good condition. Title and risk of loss or damage to all items shall be the responsibility of the contractor until accepted by the receiving agency. The contractor shall be responsible for filing, processing, and collecting any and all damage claims accruing prior to acceptance.
- A.16.2.** Contractor(s) shall be required to deliver products and services as offered on or before the required date. Deviations, substitutions, or changes in products and services shall not be made unless expressly authorized in writing by the State.

A.17. Invoicing and Payment

- A.17.1.** Contractor shall be paid upon submission of an accurate and proper invoice(s), as defined by Title 62 O.S. §34.73, to the agency, at the prices stipulated on the contract. Failure to provide accurate invoices may result in delay of processing invoices for payment. Pursuant to 74 O.S. §85.44B, invoices shall be paid in arrears after products have been delivered or services provided. Invoices shall contain the purchase order number, a description of the services provided, and the dates of those services.
- A.17.2.** Interest on late payments made by the State of Oklahoma is governed by Title 62 O.S. §34.71 and 62 O.S. §34.72.

A.18. Tax Exemption

State agency acquisitions are exempt from sales taxes and federal excise taxes. Offerors shall not include these taxes in price quotes.

A.19. Audit and Records Clause

- A.19.1.** As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form. In accepting any contract with the State, the successful contractor(s)

agree any pertinent State or Federal agency shall have the right to examine and audit all records relevant to execution and performance of the contract.

- A.19.2.** The contractor(s) is required to retain records relative to the contract for the duration of the contract and for a period of seven (7) years following completion and/or termination of the contract. If an audit, litigation, or other action involving such records is started before the end of the seven-year period, the records are required to be maintained for two (2) years from the date that all issues arising out of the action are resolved, or until the end of the seven (7) year retention period, whichever is later.

A.20. Non-Appropriation Clause

The terms of any contract and any Purchase Order issued for multiple years under the contract are contingent upon sufficient appropriations being made by the Legislature or other appropriate government entity. Notwithstanding any language to the contrary in the solicitation, purchase order, or any other contract document, the procuring agency may terminate its obligations under the contract if sufficient appropriations are not made by the Legislature or other appropriate governing entity to pay amounts due for multiple year agreements. The Requesting (procuring) Agency's decisions as to whether sufficient appropriations are available shall be accepted by the contractor and shall be final and binding.

A.21. Choice of Law

Any claims, disputes, or litigation relating to the solicitation, or the execution, interpretation, performance, or enforcement of the contract shall be governed by the laws of the State of Oklahoma.

A.22. Choice of Venue

Venue for any action, claim, dispute, or litigation relating in any way to the contract shall be in Oklahoma County, Oklahoma.

A.23. Termination for Cause

- A.23.1.** The contractor may terminate the contract for default or other just cause with both a 30-day written request and upon written approval from the State. The State may terminate the contract for default or any other just cause upon a 30-day written notification to the contractor.
- A.23.2.** The State may terminate the contract immediately, without a 30-day written notice to the contractor, when violations are found, when conditions preclude the 30-day notice, or when the State determines that, an administrative error occurred prior to contract performance.
- A.23.3.** If the contract is terminated, the State shall be liable only for payment for products and/or services delivered and accepted.

A.24. Termination for Convenience

- A.24.1.** The State may terminate the contract, in whole or in part, for convenience if the State Purchasing Director or the State CIO determines that termination is in the State's best interest. The State shall terminate the contract by delivering to the contractor a Notice of Termination for Convenience specifying the terms and effective date of contract termination. The contract termination date shall be a minimum of 60 days from the date the Notice of Termination for Convenience is issued by the State.
- A.24.2.** If the contract is terminated, the State shall be liable only for products and/or services delivered and accepted, and for costs and expenses (exclusive of profit) reasonably incurred prior to the date upon which the Notice of Termination for Convenience was received by the contractor.

A.25. Insurance

The contractor shall maintain and provide proof to the State of the following insurance during the term of this agreement:

1. Worker's Compensation and Employer's Liability Insurance in accordance with applicable law.
2. Commercial General Liability Insurance on a per occurrence basis with limits of liability not less than \$1,000,000 per occurrence and aggregate combined single limit, Personal Injury, Bodily Injury and Property Damage.
3. Automobile Liability Insurance with limits of liability of not less than \$1,000,000 per occurrence combined single limit including Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
4. Professional Errors and Omissions Insurance shall include Consultant's Computer Errors and Omissions Coverage with limits not less than \$1,000,000 per claim and in the aggregate.

A.26. Employment Relationship

The contract does not create an employment relationship. Individuals performing services required by this solicitation or a resulting contract are not employees of the State of Oklahoma or the procuring agency. The contractor's employees shall not be considered employees of the State of Oklahoma nor of the procuring agency for any purpose, and accordingly shall not be eligible for rights or benefits accruing to State employees.

A.27. Compliance With The Oklahoma Taxpayer And Citizen Protection Act Of 2007

By submitting an offer for services, the offeror certifies that they, and any proposed subcontractors, are in compliance with 25 O.S. §1313 and participate in the Status Verification System. The Status Verification System is defined in 25 O.S. §1312 and includes but is not limited to the free Employment Verification Program (E-Verify) available at www.dhs.gov/E-Verify.

A.28. Compliance With Applicable Laws

The products and services supplied under the contract shall comply with all applicable Federal, State, and local laws and the contractor shall maintain all applicable licenses and permit requirements.

A.29. Gratuities

The right of the contractor to perform under this contract may be terminated, by written notice, if the Contracting Officer determines that the contractor, or its agent or another representative offered or gave a gratuity (e.g., an entertainment or gift) to any State employee directly involved in this solicitation. Furthermore, a contractor convicted of such violation may also be suspended or debarred.

A.30. Preclusion From Resulting Contracts

Any contractor that has provided any consulting services or technical assistance that resulted in any specifications or concepts in this solicitation, either directly or indirectly, is precluded from the award of such contract and from securing a sub-contractor that has provided such services.

A.31. Mutual Responsibilities

The State and contractor agree that under this Agreement:

- A.31.1.** Neither party grants the other the right to use any trademarks, trade names, or other designations in any promotion or publication without express written consent by the other party.
- A.31.2.** This is a non-exclusive agreement and each party is free to enter into similar agreements with others.
- A.31.3.** Each party grants the other only the licenses and rights specified. No other licenses or rights (including licenses or rights under patents) are granted.
- A.31.4.** Where approval, acceptance, consent, or similar action by either party is required under this agreement, such action shall not be unreasonably delayed or withheld.

A.32. Background Checks and Verifications

At the sole discretion of the State, the contractor may be subject to user background checks. The contractor must submit the required background check information to the State in a timely manner. The State may not allow any access prior to completion of background verification.

A.33. Confidentiality

- A.33.1.** Pursuant to Title 62 O. S. §34.12.(C). "The Office of State Finance and all agencies of the executive branch of the State shall not be required to disclose, directly or indirectly, any information of a State agency which is declared to be confidential or privileged by State or Federal statute or the disclosure of which is restricted by agreement with the United States or one of its agencies, nor disclose information technology system details that may permit the access to confidential information or any information affecting personal security, personal identity, or physical security of State assets."

If required for the performance of this contract, the above information may be given to the contractor after the contract is awarded in accordance with the requirements of this section.

- A.33.2.** The contractor shall maintain strict physical security of all data and records entrusted to it. If certain functions are sub-contracted in accordance with the terms expressed herein, the contractor shall insure that the sub-contractor maintains strict physical security of all data and records transmitted to the sub-contractor.
- A.33.3.** The contractor shall never turn data or records over to a third party unless specifically authorized to do so by the DCS, the State's CIO, the State Agency Director, or in compliance with a valid court order.

A.34. Unauthorized Obligations

At no time during the performance of this contract shall the contractor have the authority to obligate the State or the agency for payment of any goods or services over and above the awarded contract. If the need arises for goods or services over and above the contract for this project, contractor shall cease the project and contact agency for approval prior to proceeding.

A.35. Electronic and Information Technology Accessibility

Pursuant to Title 74, Section 85.7d. and OAC 580:16-7-56 electronic and information technology procurements, solicitations, agreements, and contracts shall comply with applicable Oklahoma Information Technology Accessibility Standards issued by the

Oklahoma Office of State Finance.

EIT Standards may be found at www.ok.gov/DCS/Central_Purchasing/index.html or http://www.ok.gov/OSF/documents/isd_itas.doc.

1) For Information Technology or Communications Products, Systems and Applications not requiring development and/or customization. The contractor shall provide a description of conformance with the applicable Oklahoma Information Technology Accessibility Standards for the proposed product, system, or application by means of either a Voluntary Product Accessibility Template (VPAT) or other comparable document, upon request.

The contractor shall indemnify and hold harmless the State of Oklahoma and any Oklahoma Government entity purchasing the products, systems, or applications not requiring development and/or customized by the contractor from any claim arising out of the contractor's failure to comply with applicable Oklahoma Information Technology Accessibility Standards subsequent to providing certification of compliance to such Standards.

2) For Information Technology or Communications Products, Systems or Applications requiring development and/or customization. The contractor shall provide a description of conformance with the applicable Oklahoma Information Technology Accessibility Standards for the proposed product, system, or application developed and/or customized by means of either a Voluntary Product Accessibility Template (VPAT) or other comparable document, upon request. Additional requirements and documentation may be required and compliance shall be necessary on the contractor's part. Such requirements shall be stated in documents such as State Bids, Request for Proposals, Contracts, Agreements, Purchase Orders, and Amendments.

The contractor shall indemnify and hold harmless the State of Oklahoma and any Oklahoma Government entity purchasing the products, systems, or applications from the contractor, from any claim arising out of the contractor's failure to comply with applicable Oklahoma Information Technology Accessibility Standards subsequent to providing certification of compliance to such Standards. However, the contractor shall no longer have an obligation to indemnify the State for liability resulting from products, systems or applications developed and/or customized that are not in compliance with applicable Oklahoma Information Technology Accessibility Standards ("Standards") after the State has tested and confirmed that the product, system or application meets the accessibility requirements in the Standards.

A.36. Patents and Copyrights

If in the performance of this contract, contractor uses any Product covered by a third party's patent or copyright, it is mutually agreed and understood without exception that the contractor's contract prices shall include all royalties or costs charged by the third party arising from the use of such patent or copyright. If such royalties or costs are not covered in the contractor contract price, contractor's obligations are as outlined immediately below.

A.36.1. If a third party claims that a product the contractor provides to an Procuring Agency infringes that party's patent or copyright, the contractor shall defend the State against that claim at contractor's expense and pay all costs, damages, and attorney's fees that a court finally awards, provided the State: (i) promptly notifies the contractor in writing of the claim; and (ii) to the extent authorized by the Attorney General of the State Oklahoma, allows the contractor to control, and cooperates with the contractor in, the defense and any related settlement negotiations; provided however, that if the Attorney General of the State of Oklahoma does not authorize the contractor to have sole control of the defense and any related settlement negotiations, then to the extent allowed by Oklahoma law, contractor shall have no obligation to indemnify the State of Oklahoma under this Section.

If such a claim is made or appears likely to be made, the State agrees to permit contractor to enable the State to continue to use the Product, or to modify it, or replace it with one that is at least functionally equivalent. If the contractor determines that none of these alternatives is reasonably available, the State agrees to return the product to the contractor upon written request. Contractor shall then give the State a refund equal to the net book value for the product, provided the State has followed applicable accounting principles. Net book value is the original cost of the product amortized over three (3) years using the straight-line accounting method of depreciation.

A.36.2. Contractor has no obligation regarding any claim based on any of the following: (i) anything the State provides which is incorporated into a product; (ii) modification of a product by any party other than contractor, contractor's representative or contractor's sub-contractor, or any State employee acting at the contractor's direction, or a program's use in other than its Specified Operating Environment; (iii) the combination, operation, or use of a product with other products not provided by contractor as a system, or the combination, operation or use of a product with any product, data, or apparatus that contractor did not provide; or (iv) infringement by a non-contractor product alone, as opposed to its combination with products contractor provides to the State as a system.

A.37. Federal Terms and Conditions

The following terms apply if federal monies are used to fund this solicitation:

A.37.1. Equal Opportunity and Discrimination

The contractor certifies they are an Equal Opportunity Employer, a provider of services and/or assistance, and is in compliance with the 1964 Civil Rights Act, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, as amended and Executive Orders 11246 and 11375. The provider assures

compliance with the Americans with Disabilities Act of 1990 (Public Law 101-336), all amendments to, and all requirements imposed by the regulations issued pursuant to this act.

A.37.2. Lobbying

The contractor certifies compliance with the Anti-Lobbying law, Section 1352, Title 31 of the U.S. Code, and implemented at 45 CFR Part 93, for persons entering into a grant or cooperative agreement over \$100,000.00 as defined at 45 CFR 93, Section 93.105 and 93.110.

A.37.3. Drug-Free Workplace

The contractor certifies compliance in providing or continuing to provide a drug-free workplace in accordance with the Drug-Free Workplace Act of 1988, and implemented at 45 CFR part 76, Subpart F, for grantees, as defined at 45 CFR Part 76, Sections 76.605 and 76.610.

A.37.4. Environmental Protection

If the payments pursuant to the contract are expected to exceed \$100,000.00, then the contractor must comply with all applicable Federal Laws such as Section 306 of the Clean Air Act (42 U.S.C. 1857 (L)), Section 508 of the Clean Water Act (33 U.S.C. 1638), Executive Order 11738, and Environmental Protection Agency Regulations (40 C.F.R Part 15), which prohibit the use under nonexempt Federal contract, grant or loans of facilities included on the EPA List of Violating Facilities.

A.38. Assignment

Contractor's obligations under this contract may not be assigned or transferred to any other person, firm, or corporation without the prior written consent of the State.

A.39. Severability

If any provision for this contract shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of this contract is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

A.40. Failure to Enforce

Failure by the State of Oklahoma at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of the State of Oklahoma to enforce any provisions at any time in accordance with its terms.

A.41. Licensed Software

A.41.1. Under no circumstances shall the contractor be required to install or maintain software packages that it has reason to believe are not properly licensed.

A.41.2. All software/software licensing previously installed by the agency remains the responsibility of the agency. Software used by the contractor in performance of this contract is the responsibility of the contractor.

A.42. Contract

The contract shall be for indefinite delivery and indefinite quantity for the products/services awarded.

A.43. Conflict of Interest

Contractor must disclose any contractual relationship or any other relevant contact with any State personnel, or other State contractors involved in the development of this solicitation that result in a contract. Any conflict of interest shall, at the sole discretion of State, be grounds for termination of project involvement; provided that such termination must be made within a reasonable time after disclosure of such relationships or contacts.

In addition to any requirements of law or through a professional code of ethics or conduct, the contractor and the contractor's employees performing services for the State are required to disclose any outside activities or interests that conflict or may conflict with the best interests of the State. Further, such employees shall not plan, prepare, or engage in any activity that conflicts or may conflict with the best interests of the State of Oklahoma during the period of this agreement without prior written approval of the State. Prompt disclosure is required under this paragraph if the activity or interest is related, directly or indirectly, to any person or entity currently under contract with or seeking to do business with the State, its employees, other third-party individuals, or entities holding contracts with the State.

A.44. Limitation of Liability

To the extent any limitation of liability is construed by a court of competent jurisdiction to be a limitation of liability in violation of Oklahoma law, such limitation of liability shall be void.

A.45. Media Ownership (Disk Drive and/or Memory Chip Ownership)

- A.45.1.** In conjunction with the Oklahoma Computer Equipment Recovery Act and the Office of State Finance's Information Security, Policies, Procedures, and Guidelines – Media Sanitization Procedures for the Destruction or Disposal of all Electronic Storage Media: disk drives and memory cards purchased with or for use in leased equipment under this contract remain the property of the State of Oklahoma.
- A.45.2.** Disk drives and memory cards purchased with or included in leased or purchased equipment under this contract shall remain the property of the State of Oklahoma; therefore, 'Keep Your Hard Drive' costs must be included in the offeror's proposed cost.
- A.45.3.** Personal Identification Information may be retained within electronic media devices and components; therefore, the State shall not allow the release of electronic media either between State Agencies or for the resale of refurbished equipment that has been in use by State entities, by the contractor to the general public or other entities. Electronic Media Retention by the State entities for equipment whether purchased or leased shall also be applied to replacement devices and components the selected offeror's may supply during the downtime (repair) of equipment purchased or leased through this contract. If a device has to be removed from a location for repairs, there shall be sufficient safeguards in place (such as a record of hard drive serial numbers) to protect the Personal Identification Information that may be stored within the hard drive/memory of the device.
- A.45.4.** The State of Oklahoma IT Security Policies may be found at:
www.ok.gov/OSF/documents/StateOfOklahomaInfoSecPPG_osf_12012008.pdf

A.46. Offshore Services

No offshore services are provided for under the resulting contract.

A.47. Failure To Provide

The contractor's repeated failure to provide defined services, without reasonable basis as determined by the State of Oklahoma, shall constitute a material breach of the contractor's obligations, which may result in cancellation of the contract.

A.48. Agency Policies

The contractor's employees and/or sub-contractors must adhere to the agency policies pertaining to acceptable use of Internet and electronic mail, facility and data security, press releases, and public relations. It is up to the contractor to review and relay agency policies covering the above to the consulting staff.

A.49. Compliance With Technology Policies

The contractor agrees to adhere to the State of Oklahoma "Information Security Policy, Procedures, and Guidelines" available at:
www.ok.gov/OSF/documents/StateOfOklahomaInfoSecPPG_osf_12012008.pdf

A.50. Emerging Technologies

The State of Oklahoma reserves the right to modify the terms of this contract at any time to allow for technologies not identified elsewhere under this document. If there are repeated requests for an "emerging technology" and the State feels it is warranted to add such technologies, the State reserves the right to include such technology hereunder or to issue a formal modification or amendment to the contract.

A.51. Ownership Rights

- It is understood and agreed that the Software is being developed by the contractor for the sole and exclusive use of the State of Oklahoma. Moreover, except with regard to any deliverable based on contractor's reusable or pre-existing intellectual property ("Utilities"), the State of Oklahoma shall be deemed the sole and exclusive owner of all right, title, and interest therein, including all copyright and proprietary rights relating thereto.
- Except for any utilities, all work performed by the contractor of software and any supporting documentation therefore shall be considered as Works for Hire (as such are defined under the U.S. Copyright Laws) and, as such, shall be opened by and for the benefit of State of Oklahoma.

A.52. Right of Use

- The State has the right to use or not use the software, not including any utilities, and to use, reproduce, re-use, alter, modify, edit, or change the software as it sees fit and for any purpose. However, contractor shall bear no liability for any changes the State makes to such software.
- In the event that it should be determined that any of such software or supporting documentation does not qualify as a "Work Made for Hire", contractor irrevocably grants to the State an non-exclusive, irrevocable license to use such portion. With respect to any Utilities, the State shall have the right to perpetual, internal use of the Utilities included in the deliverable.
- Contractor shall assist the State and its Agents, upon request, in preparing U.S. and foreign copyright, trademark, and/or patent

applications covering Software. Contractor shall sign any such applications, upon request, and deliver them to the State. The State of Oklahoma shall bear all expenses that it causes to be incurred in connection with such copyright, trademark, and/or patent protection.

A.53. Source Code Escrow – Reference Title 62 O.S. § 34.31

No State agency, as defined by Section 250.3 of Title 75 of the Oklahoma Statutes, nor the Purchasing Division of the Department of Central Services, unless otherwise provided by Federal law, shall enter into a contract for the acquisition of customized computer software developed or modified exclusively for the agency or the State, unless the contractor agrees to place into escrow with an independent third party the source code for the software and/or modifications.

A.53.1. The contractor must agree to place the source code for the software and any upgrades supplied to an agency in escrow with a third party acceptable to the agency and to enter into a customary source code escrow agreement which includes a provision that entitles the agency to receive everything held in escrow upon the occurrence of any of the following:

1. A bona fide material default of the obligations of the contractor under the agreement with the agency;
2. An assignment by the contractor for the benefit of its creditors;
3. A failure by the contractor to pay, or an admission by the contractor of its inability to pay, its debts as they mature;
4. The filing of a petition in bankruptcy by or against the contractor when such petition is not dismissed within sixty (60) days of the filing date;
5. The appointment of a receiver, liquidator or trustee appointed for any substantial part of the contractor's property;
6. The inability or unwillingness of the contractor to provide the maintenance and support services in accordance with the agreement with the agency; or
7. The ceasing of a contractor of maintenance and support of the software.

The fees of any third-party escrow agent subject to this section shall be borne by the contractor.

A.53.2. As used in this section:

1. "State agency" shall include all State agencies, whether subject to the Central Purchasing Act or not, except the Oklahoma Lottery Commission; and
2. "Source code" means the programming instruction for a computer program in its original form, created by a programmer with a text editor or a visual programming tool and saved in a file.

A.54. Proposal Clarification Questions

The State reserves the right, at its sole discretion, to request clarifications of technical proposals or to conduct discussions for the purpose of clarification with any or all contractors. The purpose of any such discussions shall be to ensure full understanding of the proposal. If clarifications are made because of such discussion, the contractor(s) shall put such clarifications in writing.

A.55. Performance and Upgrades

Offeror shall provide documentation of the projected schedule of recommended or required system upgrades to this system or any software provided to service this system for the three (3) year period following the target purchase date. If offeror does not plan recommended or projected system upgrades, the offeror shall provide documentation in the offer that the offeror plans no system upgrades to the high technology system for the three (3) year period following the target purchase date (Title 74 § 85.7c).

A.56. Right to Renegotiate

Prior to exercising the State's right to cancel a contract, the State may renegotiate an existing contract with a contractor for the purpose of obtaining more favorable terms for the State, provided that the term of the contract is not modified.

A.57. Publicity

The award of this contract to contractor is not in any way an endorsement of contractor or contractor's services by the State and shall not be so construed by contractor in any advertising or publicity materials. Contractor agrees to submit to the State all advertising, sales promotion, and other publicity matters relating to this contract wherein the State's name is mentioned or language used from which the connection of the State's name therewith may, in the State's judgment, be inferred or implied. Contractor further agrees not to publish or use such advertising, sales promotion, or publicity matter without the prior written consent of the State. Nor shall contractor release any informational pamphlets, notices, press releases, research reports, or similar public notices concerning this project without obtaining the prior written approval of the State.

A.58. Mandatory and Non-Mandatory Terms

A.58.1. Whenever the terms “shall”, “must”, “will”, or “is required” are used in this RFP, the specification being referred to is a mandatory specification of this RFP. Failure to meet any mandatory specification may cause rejection of the Offeror’s Proposal.

A.58.2. Whenever the terms “can”, “may”, or “should” are used in this RFP, the specification being referred to is a desirable item and failure to provide any item so termed shall not be cause for rejection.

A.59. Special Provisions

Special Provisions apply with the same force and effect as these General Provisions. However, conflicts or inconsistencies shall be resolved in favor of the Special Provisions.

B. SPECIAL PROVISIONS

B.1. Contractors and Sub-Contractors Obligations

- B.1.1.** The contractor may use sub-contractors in support of this contract; however, the contractor shall remain solely responsible for the performance of this contract.
- B.1.2.** All payments for products or services shall be made directly to the contractor. If sub-contractors are to be used, the sub-contractors shall be identified in the Proposal and shall include the nature of the services to be performed. The State reserves the right to approve any and all sub-contractors providing services under this contract.
- B.1.3.** All contractor and sub-contractor changes after award, including changes of the actual employees performing services on this contract, are subject to approval by the State. No payments shall be made to the contractor for services performed pursuant to this contract by unapproved employees of a sub-contractor.
- B.1.4.** Contractor's employees or agents, if any, who perform services for the State under this agreement shall also be bound by the provisions of this agreement. At the request of the State, contractor shall provide adequate evidence that such persons are their employees or agents. In accordance with the section on "Employment Relationship", the State shall not be responsible to contractor's employees for any employee benefit or any obligation relating to employment, including health insurance benefits, workers' compensation insurance, paid vacation, or any other employee benefit.

B.2. Warrants

Contractor warrants and represents that products or deliverables specified and furnished by or through the contractor shall individually, and where specified by contractor to perform as a system, be substantially uninterrupted and error-free in operation and guaranteed against faulty material and workmanship for a warranty period of a minimum of ninety (90) days from the date of acceptance or the maximum allowed by the manufacturer. During the warranty period, defects in the products or deliverables specified and furnished by or through the contractor shall be repaired or replaced by contractor at no cost or expense to the State.

B.3. Ordering

Any services to be furnished under this contract shall be ordered by the issuance of written purchase orders by the State agencies and authorized entities. There is no limit on the number that may be issued. Delivery to multiple destinations may be required. All orders are subject to the terms and conditions of this contract. Any purchase order dated prior to expiration of this contract shall be performed. In the event of conflict between a purchase order and this contract, the contract shall have precedence.

C. SOLICITATION SPECIFICATIONS

C.1. Overview

This solicitation is for the acquisition of specific Loose Tube Fiber Optic Cable meeting the requirements and specifications outlined below. The resulting contracts may be to multiple vendors if it is in the best interest of the state.

C.2. Requirements

- C.2.1.** The state requires the following types of fiber optic cable in the following lengths:
- 100,000 feet of 24 SMF-28 strand fiber optic cable specified herein.
 - 4,884,000 feet of hybrid 48 strand fiber optic cable specified herein.
 - 1,452,000 feet of hybrid 96 strand fiber optic cable specified herein.
 - 1,000,000 feet of hybrid 144 strand fiber optic cable specified herein.
 - 20,000 of hybrid 48 strand indoor/outdoor plenum fiber optic cable specified herein.
 - 10,000 of 24 SMF-28 strand indoor/outdoor plenum fiber optic cable specified herein.
- C.2.2.** Each reel should contain 4 miles of fiber.
- C.2.3.** Price is to be price per foot/reel, delivered to pre-defined locations throughout the state of Oklahoma.
- C.2.4.** Vendor is to provide time schedule of the number of reels per month that can be delivered from the date of the order.
- C.2.5.** Price for shipping / delivery to be included in the cost of the fiber reels per delivered per month. Locations may vary around Oklahoma, Truckload. Freight Allowed – Offloading is required at time of delivery.

C.3. General Information

The following cable designs incorporate gel-free loose buffer tubes with dry waterblocking yarns shall be applied longitudinally a dielectric central strength member. The core will be made with up to 8 buffer tubes. The core is surrounded by dielectric strength elements, water swellable tape, and an outer polyethylene jacket to provide abrasion resistance and overall protection. The cable will have Light Armor, consisting of a corrugated steel tape plastic coated on both sides for corrosion resistance and shall be applied over the cable core and water swellable tape with overlapping seam with corrugation in register. The outer jacket shall be applied over the corrugated steel tape armor.

The specified cables part numbers are below:

| Fiber Count | Manufacturer | Cable type | Part Number |
|--------------------------|--------------|------------------------|--|
| 24: 24 SMF | OFS | Loose tube light armor | AT-3BEH2YT-024 |
| 48: 36 SMF, 12 NZDF | OFS | Loose tube light armor | AT-QBAH2YT-048-36/12-62 |
| 96: 72 SMF, 24 NZDF | OFS | Loose tube light armor | AT-QBAH2YT-096-72/24-62 |
| 144: 108 SMF, 36 NZDF | OFS | Loose tube light armor | AT-QBAH2YT-144-108/36-62 |
| 24: 24 SMF LL | Corning | Corning Altos Lite | 024EUC-T4100D20 |
| 48: 36 SMF LL, 12 NZDF | Corning | Corning Altos Lite | 048XUC-CM818D20 |
| 96: 72 SMF LL, 24 NZDF | Corning | Corning Altos Lite | 096XUC-CM817D20 |
| 144: 108 SMF LL, 36 NZDF | Corning | Corning Altos Lite | 144EUC-CM836D20 |
| 24: 24 SMF | Corning | Indoor/Outdoor Plenum | Pending |
| 48: 36 SMF, 12 NZDF | Corning | Indoor/Outdoor Plenum | Pending |
| | | | or Approved Equal – Corning Fiber |

C.4. Alternate Cable

If offeror desires to submit alternative cables that are based upon an “Approved Equal – Corning Fiber”, the alternates must meet the following specifications. The offeror must also submit valid verifications testing results indicating that the alternate does in fact meet all specifications listed below.

C.5. Cable Design Specifications

- C.5.1.** All cables supplied must be RDUP accepted and meet the requirements of RDUP 7 CFR 1755.900, Telcordia GR-20-CORE Issue 3, ANSI/ICEA S-87-640-2005.

C.5.2. All testing performed must be based on EIA/TIA-455 standards. Manufacturing of this cable must be completed under strict quality control standards with ISO 9001 and TL9000 R4.0 certification. The manufacturer must be qualified to ISO 14001:2004.

C.5.3. Recommended environmental temperatures ranges are specified in Table 1.

| | |
|------------------------------|----------------------------|
| Operating Temperature | -40 to 70°C (-40 to 158°F) |
| Installation Temperature | -30 to 70°C (-22 to 158°F) |
| Storage/Shipping Temperature | -50 to 70°C (-22 to 158°F) |

C.5.4. Since the fiber optic cable is a long-term investment by the State of Oklahoma, upon request the Manufacturer must show production of loose tube cables for at least 20 years and provide references of deployed cables > 20 years old from the date of the RFP.

C.6. Cable Construction

C.6.1. Central Member

The cable shall have a central member to function as an anti-buckling element. The central member shall be constructed from a glass/epoxy composite dielectric rod. A polyethylene overcoat may be applied to the central member to provide the proper spacing between buffer tubes during stranding if required by geometric constraints. A water blocking thread shall be placed longitudinally along the central member.

C.6.2. Buffer Tubes

The fiber buffer tubes shall be constructed of polypropylene, with an outer diameter of 2.5 +/- 0.1 mm and maximum nominal wall thickness of 0.45 mm. Each buffer tube shall contain up to 12 fibers. The fibers will be loose within the buffer tubes, allowing the fibers to move freely. Each buffer tube shall contain water blocking thread or material embedded in the inside wall of the buffer tube for water-blocking protection. The water blocking material shall be non-nutritive to fungus, electrically non-conductive, and homogeneous. It shall also be free from dirt or foreign matter. This material will preclude the need for other water-blocking materials such as gels, yarns, foams, or tapes; the buffer-tube shall be gel-free. Gel-filled buffer tubes will not be accepted as a product offering.

If required by the State of Oklahoma, the manufacturer must provide objective evidence that the water-blocking materials used by the cable have been successfully operational in the field for more than 8 years.

C.6.3. Fiber and Buffer tube Color Code

The individual fibers and buffer tubes are color coded for ease of identification per EIA/TIA-598.

Table 2 – Fiber and Buffer Tube Color Code

| Fiber or Tube Number | Color |
|----------------------|--------|
| 1 | Blue |
| 2 | Orange |
| 3 | Green |
| 4 | Brown |
| 5 | Slate |
| 6 | White |
| 7 | Red |
| 8 | Black |
| 9 | Yellow |
| 10 | Violet |
| 11 | Rose |
| 12 | Aqua |

C.6.4. Filler Rods

Fillers may be included in the cable core to lend symmetry to the cable cross section where needed. Fillers shall be placed so that they do not interrupt the consecutive positioning of the buffer tubes. In dual layer cables, any fillers shall be placed in the inner layer. Fillers shall be nominally 2.5 mm in outer diameter.

C.6.5. Buffer Tube Stranding

The buffer tubes (and filler rods, if necessary) shall be stranded in a reverse oscillation lay (ROL) or “S-Z” technique around the central member for easy mid-span access.

C.6.6. Cable Core Binders

Two polyester yarn binders shall be applied contrahelically with sufficient tension to secure each buffer tube layer to the dielectric central member without crushing the buffer tubes. The binders shall be non hygroscopic, non wicking, and dielectric with low shrinkage.

C.6.7. Cable Core Water Blocking

Water blocking is accomplished via gel-free elements within the cable core. Water blocking elements, binders and/or tapes depending on the cable construction, shall be applied about the cable's core and appropriate jacket materials to provide water blocking in the interstices created between the cable materials. Waterblocking performance must comply with GR-20, section 6.3.1.1 using the test method in compliance with FOTP-82.

C.6.8. Strength Elements

Fiberglass strength elements are applied over the cable core to provide the cable with the required tensile strength.

C.6.9. Outer Jacket

A black MDPE outer polyethylene jacket is applied over the cable to provide overall mechanical protection. The MDPE must be in compliance with ASTM D 1248: Type II, Class C, Category 4, either Grades E9 or J4.. The jacket will be continuous, free from pinholes; splits, blisters, or other imperfections and have a nominal thickness of 1.3 mm for RDUP accepted cables and 1.2 mm for standard cables.

C.6.10. Ripcords

- a) Single Jacket - For ease of jacket removal, at least one (1) clearly identifiable polyester ripcords shall be placed underneath the outer jacket.
- b) Light Armor - For ease of jacket removal, two (2) clearly identifiable aramid ripcords shall be placed underneath the armor/inner jacket layer with approximately 180 degrees of separation.

C.6.11. Steel Armor (for Light Armor)

A corrugated, co-polymer coated carbon steel (ECCS) tape shall be applied longitudinally directly over the fiberglass strength elements to provide mechanical protection against rodent damage. The tape shall be 0.008" thick and coated on both sides for corrosion resistance, while easily removed during fiber splicing. The armor shall have an overlapping seam. The cable shall contain waterblocking material between the armor and the cable core.

C.6.12. Dimensions

Below are the specified cable configurations and dimensions.

Table 3, Dimensions

| <i>Number of Positions</i> | <i>Fiber Count</i> | <i>Nominal Outer Diameter</i> <i>(in)</i> | <i>Nominal Outer Diameter</i> <i>(mm)</i> | <i>Nominal Cable Weight</i> <i>(lb/1000ft)</i> | <i>Nominal Cable Weight</i> <i>(kg/km)</i> | <i>SM Cable Length</i> <i>ft</i> | <i>SM Cable Length</i> <i>m</i> |
|---|--------------------|--|--|---|---|-------------------------------------|------------------------------------|
| <i>Single Jacket, Light Armored Cable</i> | | | | | | | |
| 5 | 48 | 0.457 | 11.6 | 84 | 125 | 45934 | 14000 |
| 8 | 96 | 0.555 | 14.1 | 114 | 170 | 45934 | 14000 |

C.7. Jacket Print & Cable Packaging

The length shipped shall be greater than or equal to the ordered length. All cables shall have sequential length markings along the cable sheath, every two feet for cables marked in feet, or every meter for cables marked in meters. The cable length shall be no shorter than the marked length, but may be up to 1% greater than the marked length. If the initial cable marking (white characters) fails to meet the marking requirements, the cable must be remarked. The remarking is imprinted with yellow characters on a different portion of the cable sheath. Therefore, for any cable that contains two sets of cable marking, only the yellow marking should be used. The outer jacket shall have "Oklahoma State Fiber" labeled on the jacket at each two foot interval.

As required by the NESC, ANSI C2-1993, all cables manufactured after 1993 shall have a visual identifier resembling a telephone handset to identify them as telecommunications/data cables.

C.7.1. Cable End Fastening

To provide access for testing, the bottom end, "test tail", shall be approximately three meters in length and easily accessible. For wooden reels the end shall be protected by protection rings and shall be securely fastened to the outside of the reel flange by wood screws. For plywood reels, the end shall be fed into the 2nd slot and be protected by wood lagging.

C.7.2. Information Accompanying the Reel

Each cable shall have a certified test data sheet attached to the reel in a waterproof wrapping containing the following information: manufacturer, cable number, date, customer name, ordered length, order number, ship length, cable code, reel number, attenuation specification(s), number of fibers, beginning and ending sequential length markings, gross weight, net weight, Inspected by signature, cable construction, fiber transmission data, bandwidth data (for multimode fibers only), and authorized signature.

C.7.3. Reel tag

Each cable shall have a reel tag fastened to the reel in a waterproof wrapping containing the following information: cable number, date, customer name, ordered length, customer order number, ship length, customer cable code, customer reel number, customer’s attenuation specification(s), number of fibers, beginning and ending sequential length markings, gross weight, net weight, Inspected by signature, remarks if applicable, date of manufacture by month and year.

C.7.4. Pre-Shipment End Sealing

The ends of all cables are sealed to prevent the entry of moisture during shipping, handling, storage, and installation.

C.8. Reels

- a) Manufacturer
- b) Fiber Optic Cable
- c) An arrow and the wording “cable end” to indicate the position of the outside cable end
- d) An arrow and the wording “ROLL THIS WAY” to indicate the direction the reel should be rolled
- e) Reel Number
- f) “Made in the USA”
- g) The arbor hole in the flange shall have a nominal diameter of either 2 ¾”, 3 1/8” or 4 1/4” for wooden reels.

C.9. Mechanical & Environmental Testing

Single-Mode Fibers: Per Telcordia GR-20, the magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10% of test fibers. Cable aging allows for 0.10 dB/km average attenuation change with a magnitude of the maximum attenuation change for each individual fiber to be less than 0.25 dB/km. These attenuation values include a 0.05 dB allowance for measurement repeatability.

During mechanical and environmental testing evidence of cracking, splitting or other failure of the sheath components when examined under 5X magnification would result in failure of the proposed test requirements. In addition, no fiber shall lose optical continuity because of the test.

Table 4 – Testing for Single Mode Fibers

| Cable Test | Test Method * | Requirement |
|-----------------------------|-----------------------------------|--|
| Tensile Loading and Bending | EIA/TIA-455-33 IEC 794-1-E1** | <ul style="list-style-type: none"> • Maximum diameter of mandrels and sheaves: 30 times the OD of the cable • Tensile load rating for long term operation: Variable depends on design • Tensile load rating for short term operation: Variable depends on design <p>Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss</p> |
| Cyclic Flexing | TIA/EIA-455-104 IEC 794-1-E6** | <ul style="list-style-type: none"> • Bending Angle: ± 90° • Number of cycles: 25 • Diameter of mandrel: Varies with cable OD <p>Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss</p> |

| Cable Test | Test Method * | Requirement |
|-------------------------------|---|---|
| Cyclic Impact | EIA/TIA-455-25 IEC 794-1-E4** | <ul style="list-style-type: none"> Number of impacts: 25 Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss |
| Compressive Loading | TIA/EIA-455-41 IEC 794-1-E3** | <ul style="list-style-type: none"> Dimension of plates: 100 mm Load applied: 800 N/cm (455 lbf/in) for five minutes. Attenuation measured after removal of load. Compressive load of 220 N/cm (125 lbf/in) for non-armored. Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss |
| Twist | TIA/EIA-455-85 IEC 794-1-E7** | <ul style="list-style-type: none"> Rotation Angle: 180° Number of cycles: 10 Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss |
| Low and High Temperature Bend | EIA/TIA-455-37 IEC 794-1-E11 | <ul style="list-style-type: none"> Maximum mandrel diameter: ≤ 20 cable od Temperature: -40°C for 4 hours and 70°C for four hours Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. 90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss |
| External Freezing | EIA/TIA-455-98 IEC 794-1-F6*** | <ul style="list-style-type: none"> Initial Temperature: -10°C (until frozen) Temperature: -2°C for 24 hours The temperature is allowed to rise to 23°C for 24 hours. Requirement: The magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10%. < 0.05 dB Mean Added Loss < 0.15 dB Max. Added Loss |
| Cable Galloping Test | IEEE P1222 Bellcore TR-NWT-001121 | 0.10 dB Max. Added Loss |
| Aeolian Vibration | IEEE P1222 Bellcore TR-NWT-001121 | 0.10 dB Max. Added Loss |
| Fiber Strip Ability | EIA/TIA-455-178 No equiv IEC proc | ≤5.0 N (1.1 lbf) on unaged and aged fiber ≥1.3N (0.3 lbf) on unaged and aged fiber |
| Temperature Cycling | EIA/TIA-455-3 IEC 794-1-F1** | <ul style="list-style-type: none"> Temperature range: 23°C, -40°C & 70°C Duration at each temperature: 24 hours Requirement: The average change in attenuation at the temperature extremes of -40°C and 70°C for the measured fibers shall not be greater than 0.05 dB/km. The magnitude of the maximum attenuation change of each individual fiber shall not be greater than 0.15 dB/km. ≤ 0.05 dB/km Mean Added Loss ≤ 0.15 dB/km Max Added Loss |
| Cable Aging | EIA/TIA-455-3 IEC 794-1-F1** | <ul style="list-style-type: none"> Temperature: 85°C for 168 hours, -40° for 24 hours, 70°C for 24 hours, -40°C for 24 hours, 70°C for 24 hours, returned to 23°C. Requirement: The average change in attenuation from the original values observed before the start of the temperature cycling test shall not be greater than 0.10 dB/km. The magnitude of the maximum attenuation change for each individual fiber shall not be greater than 0.25 dB/km. ≤ 0.10 dB/km Mean Added Loss ≤ 0.25 dB/km Max Added Loss |

| Cable Test | Test Method * | Requirement |
|-------------------|----------------------------------|--|
| Water Penetration | EIA/TIA-455-82 IEC 794-1-F5** | <ul style="list-style-type: none"> Cable sample: 1 ± 0.1 meter Requirement: Sample must show no signs of leaking with a one-meter static head of fluid applied for 24 hours. |

C.10. Quality Control

C.10.1. Reel Testing

Each master reel shall be tested to ensure fiber integrity, attenuation, and cable length. Single mode fibers shall be tested at both 1310 and 1550 nm. Each master reel shall be given a unique identification and the test results documented. The manufacturer must maintain documentation such that the cable history may be traced to the individual fibers used in construction of the cable.

C.10.2. Certified Test Data

Each cable shall have a certified test data sheet attached to the reel in a waterproof wrapping containing the following information: manufacturer, cable number, date, Customer Name, ordered length, order number, ship length, cable code, reel number, attenuation specification(s), number of fibers, cable construction, fiber transmission data and authorized signature.

C.11. Standard Single-Mode Fiber Specifications (ITU-TG.652D)

C.11.1. Standards References

The Optical Fiber shall meet or exceed the national and international standards for single-mode fiber described in the table below.

| Standard | Designation | Description |
|----------------|-------------|--|
| ITU-T | G.652D | extended wavelength band |
| IEC 60793-2-50 | B1.3 | extended wavelength band |
| TIA-492-CAAB | Type IVa | dispersion-unshifted with reduced water peak |

The Optical Fiber shall be referenced in the national and international standards for applications utilizing single-mode fiber described in the table below.

| Standard | Description | Optical Fiber Reference(s) |
|---------------|--|----------------------------|
| IEEE 802.3 | Ethernet for Subscriber Access Networks. (Includes both PON and point to point applications) | IEC 60793-2-50 B1.3 |
| ITU – G.983.3 | Broadband Passive Optical Network (BPON) | ITU-T G.652D |
| ITU – G.984.2 | Gigabit Capable Passive Optical Network (GPON) | ITU-T G.652D |

C.11.2. Fiber Material

The Optical Fiber shall be comprised of 100% solid synthetic silica to ensure the best possible long-term mechanical and optical performance. Natural Quartz shall not be used in any proportion of the fiber core or cladding. The State of Oklahoma reserves the right to require the manufacturer to provide objective evidence of the use of 100% synthetic silica for selected fibers.

The Optical Fiber in finished cable form shall meet the transmission specifications in all wavelength bands listed in the tables below. The fiber shall be classified as a “zero water peak” fiber, meeting the attenuation specifications below:

1. Attenuation

| Wavelength (nm) | Attenuation (dB/km) | |
|-----------------|---------------------|---------|
| | Maximum | Typical |
| 1310 | 0.33 | 0.33 |
| 1383 | 0.33 | 0.29 |
| 1490 | 0.27 | 0.21 |
| 1550 | 0.20 | 0.19 |
| 1625 | 0.27 | 0.22 |

2. Attenuation vs. Wavelength Uniformity

| Range (nm) | Reference (nm) λ | α |
|------------|--------------------------|----------|
| 1285-1330 | 1310 | 0.03 |
| 1525-1575 | 1550 | 0.02 |

The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength (λ) by more than the value α . This data is in fiber form.

3. Optical Fiber Macrobending Attenuation

| Deployment Condition | Wavelength | Induced Attenuation |
|--------------------------------------|------------|---------------------|
| 1 turn, 32 mm (1.2 inch) diameter | 1550 nm | ≤ 0.05 dB |
| 100 turns, 50 mm (2 inch) diameter | 1310 nm | ≤ 0.05 dB |
| 100 turns, 50 mm (2 inch) diameter | 1550 nm | ≤ 0.05 dB |
| 100 turns, 60 mm (2.4 inch) diameter | 1625 nm | ≤ 0.05 dB |

4. Point Discontinuities in Cable

No attenuation discontinuities greater than 0.10 dB at 1310 nm or 1550 nm shall be present in the finished cable.

5. Chromatic Dispersion

| | |
|---|------------------------------|
| Zero dispersion wavelength (λ_o) | 1302-1324 nm |
| The maximum dispersion slope (S_o) at λ_o | 0.090 ps/nm ² -km |
| Typical dispersion slope | 0.087 ps/nm ² -km |
| Dispersion Max at 1310 nm | 3.5 ps/nm ² -km |
| Dispersion Max at 1550 nm | 18 ps/nm ² -km |
| Dispersion Max at 1625 nm | 22 ps/nm ² -km |

6. Mode Field Diameter

| | |
|------------|------------------|
| at 1310 nm | 9.2±0.4 μ m |
| at 1550 nm | 10.4±0.5 μ m |

7. Cable Cutoff Wavelength

| | |
|--|----------------|
| Cable cutoff wavelength (λ_{cc}) | ≤ 1260 nm |
|--|----------------|

8. Geometry

| | |
|---|-------------------------------------|
| Glass Geometry | |
| Cladding Diameter | 125.0 ± 0.7 μ m |
| Core/Clad Concentricity Error | ≤ 0.5 μ m, +/- 0.1 μ m |
| Cladding Non-circularity | $\leq 0.70\%$ |
| Typical Splice Loss (profile alignment to itself) | <0.02 dB; excluding NZDF |
| Coating Geometry | |
| Coating Diameter (colored) | 245 – 260 μ m |
| Coating/Cladding Concentricity Error | < 12 μ m |

9. PMD in Finish Cable Form

| | |
|--|-----------------------------------|
| Fiber PMD Link Design Value (LDV) ² | ≤ 0.1 ps/(km) ^{1/2} |
| Maximum Individual Fiber | ≤ 0.1 ps/(km) ^{1/2} |

C.11.3. The Optical Fiber shall meet the Environmental specifications listed in the table below when tested in fiber form.

For all mechanical & environmental tests, the magnitude of the attenuation change at 1550nm shall be

less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10% of the test fibers. These attenuation values include a 0.05 dB allowance for measurement repeatability.

Environmental Characteristics of optical fiber (performance in closures, pedestal and cabinets)

| | |
|--|------------------------|
| Operating Temperature | -60° C to +85° C |
| Temperature Dependence of Attenuation Induced attenuation at 1310, 1550, & 1625 nm at -60° C to +85° C | ≤0.05 dB/km FOTP 3 |
| Temperature – Humidity Cycling Induced attenuation at 1310, 1550, & 1625 nm at -10 - +85° C at 95% RH | ≤0.05 dB/km FOTP 72 |
| Water Immersion, 23°C Induced attenuation at 1310, 1550, & 1625 nm due to water immersion at 23 ± 2° C | ≤0.05 dB/km FOTP 75 |
| Accelerated Aging (Temperature), 85° C Induced attenuation at 1310, 1550, & 1625 nm due to temperature aging at +85 ± 2° C | ≤0.05 dB/km FOTP 67 |
| Full Spectrum Testing & Performance Assurance | |

The Optical Fiber shall meet the other specifications listed in the table below:

| | |
|--|----------------------|
| Effective Group Index of Refraction 1310 nm 1550 nm | 1.467 1.468 |
| Rayleigh Backscattering Coefficient (for 1ns pulse width) 1310 nm 1550 nm | -79.0 dB -82.0 dB |

C.12. Non-Zero, Dispersion-Shifted, Medium Dispersion Fiber (ITU-T G.655, G.656)

This document provides recommended specifications for ITU-T G.655/G.656 single-mode fiber. These specifications are intended to provide optimum support for long haul 10 Gb/s and 40 Gb/s transmission with fully matched dispersion compensation modules available in the C-, L-, and S-bands. The fiber is optimized for Raman pumping.

C.12.1. Standards References

The Optical Fiber shall meet or exceed the national and international standards for single-mode fiber described in the table below.

| Optical Fiber Standard | Designation | Description |
|------------------------|---------------------------------|---|
| ITU-T | ITU-T G.656 and ITU-T G.655 C&E | Fiber and cable with non-zero dispersion for wideband optical transport |

C.12.2. Material

The optical fiber shall be comprised of 100% synthetic silica. Natural Quartz shall not be used in any proportion of the fiber core or cladding. Fiber must be made by the Modified Chemical Vapor Deposition (MCVD) process

C.12.3. The optical fiber shall meet the transmission specifications listed in the table below:

- Attenuation (Loose Tube Cabled fiber)

| Wavelength (nm) | Attenuation (dB/km) | |
|-----------------|---------------------|---------|
| | Maximum | Typical |
| 1310 | 0.35 | 0.33 |
| 1383 | 0.35 | 0.33 |
| 1450 | 0.27 | 0.25 |
| 1550 | 0.20 | 0.19 |

| | | |
|------|------|------|
| 1625 | 0.27 | 0.21 |
|------|------|------|

2. Change in Attenuation at Water Peak:

The fiber attenuation coefficient at the OH⁻ absorption peak (1383 ± 3nm) after exposure to hydrogen is ≤0.40 dB/km and ≤0.35 dB/km typically. This test simulates long-term hydrogen aging in installed cables.

3. Macrobending Attenuation at Water Peak:

| Deployment Condition | Wavelength | Induced Attenuation |
|--------------------------------------|------------|---------------------|
| 1 turn, 32 mm (1.2 inch) diameter | 1550 nm | ≤0.5 dB |
| 1 turn, 32 mm (1.2 inch) diameter | 1625 nm | ≤0.5 dB |
| 100 turns, 60 mm (2.4 inch) diameter | 1550 nm | ≤0.05 dB |
| 100 turns, 60 mm (2.4 inch) diameter | 1625 nm | ≤0.05 dB |

4. Point Discontinuities:

No attenuation discontinuities greater than 0.05 dB at 1550 nm.

5. Chromatic Dispersion:

| | |
|--|-------------------------------------|
| Zero dispersion wavelength (λ_0) | ≤ 1405 |
| C-Band 1530 – 1565 nm | 5.5 – 8.9 nm |
| L-Band 1565 – 1625 nm | 6.9 – 11.4 nm |
| S-L Bands 1460 – 1625 nm | 2.0 – 11.4 nm |
| Dispersion slope at 1550 nm | < 0.045ps/nm ² -km |
| Chromatic Dispersion at 1310 nm | -5 ps/nm ² -km (typical) |

C.12.4. The optical fiber in Loose Tube Cable shall meet the Polarization Mode Dispersion (PMD) specifications listed in the table below:

| | |
|--------------------------------------|----------------------|
| Glass Geometry | |
| Cladding Diameter | 125.0±0.7 μm |
| Core/Clad Concentricity Error | ≤ 0.5 μm, +/- 0.1 μm |
| Cladding Non-circularity | ≤ 0.7% |
| DLux™ Coating Geometry | |
| Coating Diameter (colored) | 245 – 260 μm |
| Coating/Cladding Concentricity Error | ≤ 10 μm |

C.12.5. The optical fiber in Loose Tube Cable shall meet the Polarization Mode Dispersion (PMD) specifications listed in the table below:

| | |
|--|-------------------------------|
| Fiber PMD Link Design Value (LDV) ² | ≤ 0.06 ps/(km) ^{1/2} |
| Maximum Individual Fiber | ≤ 0.1 ps/(km) ^{1/2} |
| Typical Fiber LMC PMD | ≤ 0.02 ps/(km) ^{1/2} |

C.12.6. The optical fiber shall meet the Environmental specifications listed in the table below:

| | |
|--|-------------------------|
| Operating Temperature | -60° C to +85° C |
| Temperature Dependence of Attenuation Induced attenuation at 1310, 1550, & 1625 nm at -60° C to +85° C | ≤0.05 dB/km |
| Water Immersion, 23°C Induced attenuation at 1310, 1550, & 1625 nm due to water immersion at 23 ± 2° C | ≤0.05 dB/km |
| Accelerated Aging (Temperature), 85° C | |

| | |
|--|---------------------------|
| Induced attenuation at 1310, 1550, & 1625 nm due to temperature aging at $85 \pm 2^\circ \text{C}$ | $\leq 0.05 \text{ dB/km}$ |
| Full Spectrum Testing & Performance Assurance | |

C.12.7. The optical fiber shall meet the other specifications listed in the table below

| | |
|--|-------|
| Effective Group Index of Refraction | |
| 1310 nm | 1.471 |
| 1550 nm | 1.470 |
| 1625 nm | 1.470 |

D. EVALUATION

D.1. Evaluation and Award

- D.1.1.** Offers shall be evaluated on the “best value” determination in accordance with Title 74, §85.
- D.1.2.** The State reserves the right to request demonstrations and question clarifications from any or all-responding contractors.

D.2. Competitive Negotiations of Offers

In accordance with Title 74 §85.5, the State of Oklahoma reserves the right to negotiate with one, selected, all or none of the vendors responding to this solicitation to obtain the best value for the State. Negotiations could entail discussions on products, services, pricing, contract terminology or any other issue that may mitigate the State's risks. The State shall consider all issues negotiable and not artificially constrained by internal corporate policies. Negotiation may be with one or more vendors, for any and all items in the vendor's offer.

Firms that contend that they lack flexibility because of their corporate policy on a particular negotiation item shall face a significant disadvantage and may not be considered. If such negotiations are conducted, the following conditions shall apply:

- D.2.1.** Negotiations may be conducted in person, in writing, or by telephone.
- D.2.2.** Negotiations shall only be conducted with potentially acceptable offers. The State reserves the right to limit negotiations to those offers that received the highest rankings during the initial evaluation phase.
- D.2.3.** Terms, conditions, prices, methodology, or other features of the offeror's offer may be subject to negotiations and subsequent revision. As part of the negotiations, the offeror may be required to submit supporting financial, pricing, and other data in order to allow a detailed evaluation of the feasibility, reasonableness, and acceptability of the offer.
- D.2.4.** The requirements of the Request for Proposal shall not be negotiable and shall remain unchanged unless the State determines that a change in such requirements is in the best interest of the State Of Oklahoma.
- D.2.5.** BEST and FINAL – The State may request best and final offers if deemed necessary, and shall determine the scope and subject of any best and final request. However, the vendor should not expect an opportunity to strengthen its offer and should submit its best offer based on the terms and condition set forth in this solicitation.

D.3. Selection Criteria

The resultant contract(s) will be awarded to the Contractor(s) whose proposal and pricing are deemed most advantageous to the State. Proposal considerations may include (in no order of precedence):

- a. References
- b. Alternate cable specification verification
- c. Deliver plan by month
- d. Financial Stability (Pass/Fail)
- e. Cost

D.4. Evaluation

D.4.1. Evaluation Process – Determination of Solicitation Responsiveness

A responsive offer is defined as an offer that meets all the general mandatory requirements as outlined below:

- Introductory Letter
- Responding Bidder Information Sheet complete Form 076
- Certification for Competitive Bid and Contract (Non-Collusion Certification) Form 004
- Amendments, if issued, are acknowledged.

Meeting all requirements outlined above allows the offer to proceed in the evaluation process. Failure to meet all of the above may result in the proposal being disqualified from further evaluation.

Note: The following evaluation process is not presented in any sequence as any selection process may overlap the other in the evaluation.

D.4.2. Evaluation Process – Evaluation of Offer

The technical section of the offer is evaluated based on the required submittals.

D.4.3. Evaluation Process - Evaluation of Cost/Delivery.

Cost/Delivery comparisons are performed.

D.4.4. Best Value Evaluation of Product/Services

D.4.4.1. Selection

The selection and award of contractor is based upon which contractor best meets the needs of the State.

The State reserves the right to negotiate with one or more contractors, at any point during the evaluation. The State may negotiate any and all content of the offer.

D.4.5. Contractors should be prepared to participate in oral presentations and demonstrations to define their submittal, to introduce their team, and to respond to any and all questions regarding their offer if requested by the State prior to award.

E. INSTRUCTIONS TO OFFEROR

E.1. Introduction

Prospective contractors are urged to read this solicitation carefully. Failure to do so shall be at the offeror's risk. Provisions, terms, and conditions may be stated or phrased differently than in previous solicitations. Irrespective of past interpretations, practices or customs, offers shall be evaluated and any resultant contract(s) shall be administered in accordance with the plain meaning of the contents hereof. The offeror is cautioned that the requirements of this solicitation can be altered only by written amendment approved by the State and that verbal communications from whatever source are of no effect. In no event shall the offeror's failure to read and understand any term or condition in this solicitation constitute grounds for a claim after contract award.

E.2. Preparation of Offer

- E.2.1.** Any usage amounts specified are estimates only and are not guaranteed to be purchased.
- E.2.2.** Information shall be entered on the form provided or a copy thereof.

E.3. Submission of Offer

- E.3.1.** Completeness of offer(s): It is desirable that the offeror respond in a complete, but concise manner. It is the offeror's sole responsibility to submit information in the offer as requested by the solicitation. The offeror's failure to submit required information may cause its offer to be rejected. However, unnecessary information should be excluded from the offeror's offer.
- E.3.2.** Copies: the offeror's offer should be paginated and include an original document, plus four (4) copies for a total of five (5) documents. The documents' front pages should indicate original or copy.
- E.3.3.** The offeror should include a "machine readable" version, preferably in Microsoft WORD format, on CD or DVD, of the offeror's offer.

E.4. Explanation to Offeror

- E.4.1.** Offerors who need clarification shall contact the contracting officer shown on the RFP. Oral explanations or instructions shall not be binding. Any information given an offeror concerning a solicitation shall be provided promptly to all other offerors as an amendment, if that information is necessary in submitting an offer or if the lack of it would be prejudicial to other offerors.
- E.4.2.** Offerors who believe solicitation requirements or specifications are unnecessarily restrictive or limit competition may submit a request for administrative review, in writing, to the State. To be considered, a request for review must be received no later than the due date and time for submission of questions. The State shall promptly respond in writing to each written review request, and where appropriate, issue all revisions, substitutions or clarifications through a written amendment to the solicitation. Requests for administrative review of technical or contractual requirements shall include the reason for the request, supported by information, and any proposed changes to the requirements.
- E.4.3.** General Solicitation Questions – Offeror may submit general questions concerning the specifications of the solicitation. Question shall be emailed to the contracting officer listed herein. These questions shall be promptly answered in the form of an amendment and posted on the DCS website.
- E.4.4.** When posing questions, every effort should be made to be concise and include section references, when possible.
- E.4.5.** Offerors are advised that any questions received after October 13, 2011 shall not be answered.

E.5. P-Cards

The State of Oklahoma has issued P-Cards to most State agencies. The current P-Card contract holder utilizes VISA

If awarded a statewide contract will your company accept the State of Oklahoma approved purchase card:

Yes _____ No _____ (check one)

E.6. Deliverables

Note: Deliverables are to be in both hard copy and in a single machine-readable format, preferably in Microsoft Word format, on either CD or DVD. All hardcopies are to be bound or in three-ring binders, tabbed by section, and paginated.

- E.6.1.** Section One – Required Forms
 - Introductory letter.
 - Completed "Responding Bidder Information" DCS/Purchasing Form 076.
 - Completed "Certification for Competitive Bid and Contract" DCS/Purchasing Form 004.
 - Signed Amendments, if issued.

E.6.2. Section Two – Company References

Provide the names, email address, and phone number for references of two current contracts of a similar size and scope where your firm is providing services.

E.6.3. Section Three – Company Information

Vendor must provide detailed information on its company, including principals involved, number of employees, location, years in existence, a statement of financial stability, and any litigation or pending litigation for the past five years, or a statement indicating there is no litigation.

E.6.4. Section Four – Financial Status

Offeror should present information to demonstrate its financial status and performance, in the form of the last three years audited financial statements or the last three years of tax returns. A certified review may be accepted (clarification may be required) Note: This information must be submitted, at the latest, prior to award. If the contractor is a subsidiary of another entity, the last three years audited financial statements of three years tax returns for the parent company must also be submitted. The State reserves the right to withhold award to a contractor who is deemed financially weak. The State reserves the right to determine financial status at their sole discretion.

Clarification or additional documents may be requested. FINANCIAL STABILITY DETERMINATION IS A MANDATORY DELIVERABLE

E.6.5. Section Five – Alternate Cable(s) Proposed

If proposing an Approved Equal – Corning Fiber alternative, provide detailed validation that proposed cable meets specifications by addressing specifications in Sections C2 through C12.

E.6.6. Section Six - Pricing and Delivery

Complete Attachment A – Pricing Sheet

E.7. Notice of Award

A notice of award in the form of a PO or contract resulting from this solicitation shall be furnished to the successful contractor and shall result in a binding contract.