SPECIFICATIONS

Kalamazoo Public Schools
Transportation Building Fiber

PROJECT NUMBER
2599

REQUEST FOR PROPOSAL
December 19, 2017

Secant
6395 Technology Avenue • Kalamazoo, MI 49009
269-375-8998 • www.secantcorp.com

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1 Schedule of Events

Specifications Released **12/19/2017**

Project Specifications are available from:
Melissa Miller
Fax: 269-375-4222
Email: mmiller@secantcorp.com
Web: http://bids.secantcorp.com/KPS2599

Pre-bid Meeting **01/03/2018 @ 3:00 p.m. EST**

Secant Technologies
6395 Technology Ave.
Suite A
Kalamazoo, MI 49009

Deadline for Intent-to-Bid Notification **01/05/2018 @ 5:00 p.m. EST**

All prospective bidders should provide notification of their intent to bid by fax or e-mail to:
Melissa Miller
Fax: 269-375-4222
Email: mmiller@secantcorp.com

Deadline for questions **01/05/2018 @ 5:00 p.m. EST**

Melissa Miller
Fax: 269-375-4222
Email: mmiller@secantcorp.com

Bid Due Date **01/11/2018 @ 03:00 p.m. EST**

Late bids will not be accepted.
*It is **solely** the responsibility of the bidder to ensure that their bid is received and signed-in, at stated location, prior to the due date and time. For bids that are not hand-delivered by a representative of the Contractor, it is recommended that the bidder verify with School Administration office staff that their bid is received and signed-in prior to the stated due date and time.*

Deliver bids to:

KPS Technology Services
Attn: Scott Patrick
600 W. Vine St.
Kalamazoo, MI 49006

Provide two (2) sealed copies of your response and one (1) digital copy via USB storage.

Bids must be clearly marked:
KALAMAZOO PUBLIC SCHOOLS- TRANSPORTATION BUILDING FIBER- BID RESPONSE – DO NOT OPEN

Bid Bond: 5% bid bond is required – Cashiers Check or Bond

Performance Bond is required for bids of $50,000 or higher.

No bids may be withdrawn for at least ninety (90) consecutive calendar days following the bid opening.

The Owner reserves the right to accept or reject any and all bids, alternatives, or proposals that, in his judgment, serve his best interests.

The Owner reserves the right to award individual sections to different contractors

The Base Bid shall be a lump sum amount, for the work as set forth in the Bidding Documents.

Public Bid Opening Meeting **1/11/2018 @ 03:01 p.m. EST**

KPS Technology Services - Conference Room
600 W. Vine St.
Kalamazoo, MI 49006

Clarifications for Bidders

All questions/requests for clarification shall be addressed to mmiller@secantcorp.com. Questions will be compiled and answered through Addenda that will be accessible through the Secant bid document download portal at http://bids.secantcorp.com/KPS2599

Questions/requests for clarification **must** be submitted by the Deadline for Questions date/time listed in this section. Questions received after this date/time will not be answered.

Bidders are not to contact the Owner directly for information or clarification regarding this project.

2 Terms and Conditions

2.1 SALES TAX

The Contractor shall be responsible for the payment of any tax obligation it may incur in connection with the work of this project, including but not limited to State sales and use taxes. The cost of these shall be included in the bid price.

2.2 PERFORMANCE AND PAYMENT BOND

A. Acceptable bidders shall be required, as a condition precedent to award of contract, to furnish satisfactory Performance Bond and Labor and Material Payment Bond in the amount of 100% of the contract price. Performance Bond is not required if the total bid price does not equal or exceed $50,000.

B. The bidder shall deliver the required bonds to the Owner within 15 days after award of the contract. If the work is to be commenced prior thereto in response to a letter of intent, the bidder shall submit evidence to the Owner that such bonds will be furnished prior to commencement of the work.

C. The proposed bonding company of the bidder shall be acceptable to the Owner. The Owner shall be listed as oblige on the bond.

D. Contractor will not be allowed onto the project work site to begin work until after submittal of required bonds to the Owner.

E. All costs for the Performance Bond and Labor and Materials bond must be included with base bid response.

2.3 BID SECURITY

A. Each Proposal shall be accompanied by Bid Security pledging that the bidder will enter into a contract with the Owner on the terms stated in the Proposal, and will furnish Bonds as described herein. Should the bidder refuse to enter into such contract or fail to furnish satisfactory Bonds and insurances as required after Notice to Proceed, the amount of the Bid Security shall be forfeited to the Owner as liquidated damages, not as a penalty.

B. Bid Security shall be in the amount of five percent (5%) of the Base Bid(s).

C. Bid Security may take the form of a Bid Bond, Certified Check, Cashier's Check, or a Money Order. When submitting a Certified Check, Cashier's Check or Money Order for multiple Bids, it is recommended that a separate check or money order accompany each bid. **AN UNCERTIFIED PERSONAL OR COMPANY CHECK DOES NOT CONSTITUTE A BID SECURITY.**

D. The Owner will have the right to retain the Bid Security of bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all bids have been rejected.

2.4 INSURANCE

A. Limitation of Liability – By signing the bid, the bidder acknowledges that he/she is skilled and experienced in the use and interpretation of the Specifications. He/she has reviewed the Specifications for this project and has found them to be free of ambiguities and sufficient for Bid purposes. He/she has based his/her Bid solely on these documents and observations and has not relied in any way on any explanation or interpretation, oral or written, from any other source.

B. Insurance Required – Prior to commencement of the work, the Contractor shall provide to the Owner satisfactory proof of insurance and maintain during the term of the project such insurance as will protect him and the Owner from claims arising out of the Work described in this contract and performed by the Contractor consisting of:

1. Worker's Compensation Insurance including Employer's liability to cover employee injuries or disease compensable under the Worker's Compensation Statutes of the State of Michigan, disability benefit laws, if any or Federal compensation acts such as U.S. Longshoremen or Harbor Workers', Maritime

employment, or Railroad Compensation Acts, if applicable. Self-insurance plans approved by the regulatory authorities in the State of Michigan are acceptable.

2. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:

   a. All premises and operations.
   b. Explosion, collapse, and building damage.
   c. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the Supplemental Conditions section of this Contract.
   d. The usual Personal Injury Liability endorsement with no exclusions pertaining to employment.
   e. Products and Completed Operations coverage. This coverage shall extend through the Contract guarantee period.

3. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles. In light of standard policy provisions concerning (1) loading and unloading and (2) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.

4. Umbrella or Excess Liability: The Owner, for this project may waive the umbrella or excess liability coverage under the “Limits of Liability” below. This coverage may be considered when awarding this contract, however, it is not a requirement of this contract. The Contractor is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the Contractor’s general liability and to his automobile liability insurance. The Owner, Kalamazoo Public Schools, shall be listed as Additional insured.

5. Property Insurance: The Contractor shall be solely and exclusively responsible for all of its equipment and materials used or located at the Project. The Owner is hereby released and shall not have any liability of any kind whatsoever for any damage, destruction, vandalism, theft or any other loss of any kind to Contractor’s equipment and materials used or located at the Project.

   a. The Contractor shall effect and maintain similar property insurance on portions of the work stored off site or in transit when such portions of the work are included in an application for payment.

C. Limits of Liability – The required limits of liability for insurance coverage required under “Insurance Required” above shall be not less than the following:

1. Workers Compensation

Coverage A – Compensation	**Statutory**
Coverage B – Employer’s Liability	**$1,000,000.00**

2. Comprehensive General Liability

Bodily Injury – Each Occurrence	**$1,000,000.00**
Bodily Injury – Aggregate (Completed Operation)	**$1,000,000.00**

	Property Damage – Each Occurrence	**$1,000,000.00**
	Property Damage – Aggregate	**$1,000,000.00**
	or combined single limit	**$1,000,000.00**
3.	Comprehensive Automobile Liability	
	Bodily Injury – Each Person	**$1,000,000.00**
	Bodily Injury – Each Occurrence	**$1,000,000.00**
	Property Damage – Each Occurrence	**$1,000,000.00**
	or combined single limit	**$1,000,000.00**
4.	Umbrella or Excess Liability	**$2,000,000.00**

D. Insurance – Other Requirements

1. Notice of Cancellation or Intent Not to Renew – Policies will be endorsed to provide that written notice shall be given to the Owner of cancellation or of intent not to renew.
2. Evidence of Coverage – Prior to commencement of the Work, the Contractor shall furnish to the Owner, Certificates of Insurance in force. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain detail of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.
3. Qualification on Insurers – In order to determine financial strength and reputation of insurance carriers, all companies providing the coverage required shall have a financial rating not lower than XII and a policyholder's service rating no lower than A+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than A+: XII will be acceptable only upon written consent of the Owner.
4. Subrogation Clause – The following subrogation clause shall appear in all policies of insurance, "Subrogation Clause – It is hereby stipulated that this insurance shall not be invalidated should the insured waive in writing prior to a loss any or all right of recovery against any part for loss occurring to the property described herein."
5. Additional Insured Provision on Policy(ies) is to read as follows:

   "Kalamazoo Public Schools, its elected or appointed officers, officials, employees and volunteers are included as insured with regard to damages and defense of claims arising from:

   a. activities performed by or on behalf of the Named Insured,
   b. products and completed operations of the Named Insured,
   c. premises owned, leased or used by the Named Insured, or
   d. the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Named Insured."
6. ***Secant Technologies shall also be listed as Additional insured***.

2.5 ENVIRONMENTAL STATEMENT AND RESPONSIBILITY OF CONTRACTORS

A. It shall be the responsibility of the Contractor to pay any and all costs incurred from the clean-up related to any environmental hazard created by means of release, spill, leak or any other means of contamination caused by accident or negligence.

B. It shall be the responsibility of the Contractor to dispose of any product(s) and/or material following EPA, DNR, and local applicable laws and regulations.

C. It shall be the responsibility of the contractor, if required, to purchase the proper permits and notify the proper authorities prior to commencing said project or, should a "release" take place, to notify proper authorities of any such release.

D. It shall be the responsibility of the Contractor to maintain on site a blood borne pathogen plan and all necessary safety supplies associated with any spill or clean up that may occur. Contractor shall, prior to commencement of any site activities, supply to the Construction Manager, a written description of its site specific safety plan and accident prevention program. This shall serve as proof of compliance with the foregoing provisions and for coordination with the safety programs of other trade contractors.

E. The Contractor shall not use the Owner's dumpsters for any materials of any kind.

F. Please be aware that Kalamazoo Public School buildings may contain various types of asbestos-containing material (ACBM). Each building has been previously inspected with locations of ACBM being identified within the Asbestos Management Plan book located in each building's administration office. This binder will identify known locations of asbestos materials within that particular building.

Asbestos containing materials include, but are not limited to: floor tile, linoleum, plaster, pipe insulation, spray on material to walls and ceilings/support structures, wallboard, and gaskets. If any building materials that are known or suspected of containing asbestos are encountered, stop work in that area immediately. It is Kalamazoo Public Schools policy that no outside contractor may touch ACBM without explicit permission from Facilities Management. Owner's representative will take samples and analyze and provide further instruction. Contractor is responsible for any fiber release that results in fiber concentration above the Permissible Exposure Limit (P.E.L.).

G. The Contractor shall submit verification and confirmation of the above.

2.6 Quality Assurance

2.6.1 Materials

Furnish only new, first-class quality materials and equipment to be delivered, erected, connected and finished in every detail, selected and arranged to fit properly into spaces. Where no specific kind or quality of material is specified, furnish first-class quality standard article, approved by Owner.

2.6.2 Current Versions

Supply most current version of all products being provided. Prior and/or old versions of products, unless specifically identified as an exception to this requirement, in this document or its subsequent addenda and/or bulletins, shall not be acceptable. In cases where a newer version of a product is available at the time of installation, request a clarification from the Owner, in writing, via fax, electronic mail, or letter, on which product is to be used.

2.6.3 Standards Compliance

Comply with latest edition or revision of each standard of code mentioned in these specifications for use in the intended environment as follows:

American Insurance Association (AIA)
American Insurance Service Group (AISG)
American National Standard Institute (ANSI)
American Society for Testing and Materials (ASTM)
Alliance for Telecommunications Industry Solutions (ATIS) Bellcore
Building Officials and Code Administrators International, Inc. (BOCA)
Ceilings and Interior Systems Construction Association (CISCA)
Electronics Industries Association (EIA)
Federal Communications Commission (FCC)
Federal Information Processing Standards (FIPS)
General Services Administration (GSA)
International Conference of Building Officials (ICBO)
Institute of Electrical and Electronics Engineers, Inc. (IEEE)
International Organization for Standardization (ISO)
International Telecommunication Union (ITU) (Formerly CCITT)
National Electrical Manufacturers Association (NEMA)

National Fire Protection Association (NFPA)
National Electrical Code (NEC) – NFPA 70-1993
Telecommunications Industries Association (TIA)
Underwriters' Laboratories (UL)
National Institute of Standards and Technology (NIST)
National Technical Information Service (NTIS)
Occupational Safety and Health Administration (OSHA)
Rural Utilities Services USDA/RUS (RUS Formerly REA)
State and Local Municipality Codes and Ordinances
Building Industry Consulting Service International (BICSI)
HDBaseT Alliance (HDBaseT)

Where conflicts occur between codes and standards, or between codes and standards and Specifications and Plans, the one establishing the more stringent requirements shall be followed.

2.7 Contract Documents

This document along with the completed Bid Form and Proposal Documents shall constitute the Contract Documents by which performance of work shall be judged. The Owner's consultant shall be the judge of performance regarding all work.

2.8 Conformance

The Contractor warrants that all workmanship, materials, and equipment incorporated in this work will be of good quality and in conformance with the Contract Documents.

2.9 Quality Standard

The Contract Documents establish a standard of quality that the Owner has determined to be necessary for the project. It is mandatory that items of material and equipment conform to the Contract Documents and meet the quality standards in every respect.

2.10 Conformity of Work

Execute all work in conformity with best practice to accommodate work to environment and surroundings. Perform all work in accordance with drawings, manufacturer's instructions, shop drawings, this specification, and other Contractors and Vendors.

2.11 Coordinate Locations

Coordinate locations and arrangements of equipment with requirements of all other Contractors, Vendors and Owner. In cases of technical configuration or implementation difficulties, or if simplified installation is made possible by slight variance, bring such conditions to attention of Owner, in writing, via fax, electronic mail, or letter. Changes in arrangements may be made only if authorized by Owner.

Drawings are diagrammatic and indicate the general arrangement of systems and work included in these documents. Final placement and arrangement are the responsibility of the Installing Contractor.

2.12 Work Definition

Below is an outline of specific work the Contractor shall be responsible for performing:

Demolition
Project Management
Systems Engineering
Construction Scheduling
Installation
Configuration
Testing
Documentation
Owner Orientation

2.13 General Duties

2.13.1 Supervision

The Contractor shall plan, direct, supervise, coordinate, and perform the work.

2.13.2 Owner Policies and Procedures

1. A no smoking policy is in effect at all times for all areas on school property.
2. The consumption of drugs or alcoholic beverages by the Contractor's employees shall be prohibited on the Owner's property. The Contractor shall remove from the site, any employee who is vulgar, offensive, or who is under the influence of drugs or alcohol.
3. Firearms, knives, and any other weapons are not allowed on school property. This includes weapons stored in vehicles parked on Kalamazoo Public Schools property.

2.13.3 Qualified Personnel

Only certified, skilled, dependable persons who meet with the Owner's approval at all times in every capacity shall be utilized.

2.13.4 Product Delivery and Liability

The Contractor shall take responsibility for the delivery and installation of all equipment specified in the Bid Proposal. This shall include loss or damage during shipment or installation. The Contractor warrants that all materials and equipment incorporated in the work shall be new, unless otherwise specified in the Bidding Documents. The Contractor warrants that all materials and equipment incorporated in the work shall be free from faults and defects. The Contractor shall inspect all product shipments for damages and promptly replace damaged product. No damaged product shall be stored on site.

2.13.5 Structural Damage

The Contractor shall replace or repair any damage to structure, finishes, or resulting from work performed by the Contractor. The Contractor shall REPLACE any damaged ceiling tiles.

2.13.6 Incidentals

The Contractor shall provide any incidental material, labor, or detail omitted from the Bid Proposal, yet required by governing codes and standards, local regulations, trade practices, operational functions, or good workmanship, as part of the contract work without extra charge.

2.13.7 Deviations

Deviations from Plans or Specifications shall not be permitted except upon written permission from Owner.

2.14 Project Management

The Contractor shall provide complete project management for all aspects and phases of the project, including the following:

2.14.1 Project Manager

The Project Manager shall be experienced. He or she shall have managed at least three similar projects of similar scope. The project manager shall be authorized to make decisions on behalf of the company. The project manager shall inspect work and direct the crew on an on-going basis.

2.14.2 Planning and Management

Building work shall be coordinated with the construction manager, Owner's technology consultant and/or the Owner's representative.

2.15 Time and Scheduling

2.15.1 Owner Possession

It is the intention of the Owner to take possession of the Work by the established completion date or earlier, within the shortest time possible consistent with good construction practices.

2.15.2 Schedule of Work

Upon award of the contract, the Contractor shall meet with the Owner to prepare an agreed upon schedule of work. This schedule shall provide the Owner with dates upon which stages of the work may be reviewed or inspected. The Contractor shall keep the Owner informed at all times of any modifications to the agreed upon schedule.

2.15.3 Delay of Work

If the work is delayed through the fault of the Owner (or of any separate contractor employed by the Owner or of any condition by the Owner beyond the Contractor's control) the schedule may be extended

within a period agreed upon by the Owner and the Contractor. The Contractor shall notify the Owner, in writing, of any condition or situation that in the Contractor's opinion warrants an extension of Contract Time.

2.15.4 Time Extension

The Contractor shall not be entitled to additional compensation or damages due to delays, interference's or interruptions to the Work or the Project, but shall be entitled only to an appropriate extension of time in accord with the General Conditions of the Contract for Construction.

2.16 Contractor Inspection of Work

The Contractor shall promptly facilitate inspection and testing of the Work regardless of expense as necessary or as requested by the Owner. The costs for such tests or inspections shall be born as follows:

2.16.1 Contractor Deficiencies

If such tests or inspections reveal deficiencies as measured by Construction documents or an independent consultant/testing agency, the Contractor shall bear all costs incurred to correct such deficiencies, including the cost of testing and inspection, and the cost to reconstruct any work by testing or inspection or by the correction of any deficiency.

2.16.2 Other Deficiencies

If such test and inspections do not reveal deficiencies attributable to the Contractor, the Owner shall bear all costs incurred including the cost of testing and inspection, and the cost of reconstruction. Contracts shall be modified by Change Order to reimburse the Contractor for costs.

2.17 Inspection of Work

The Owner's Consultant will inspect and "punch" the project. The Contractor is responsible to correct any issues brought forth at no additional expense to the Owner.

Retainage, as presented in this document, will be dependent on complying with the final "punch out" list.

2.17.1 Deficiencies

The Contractor shall replace, repair or otherwise correct all deficiencies in the Work during the construction of the Project, within two years after the date of substantial completion, within the time period prescribed in any special warranties and guarantees, and any longer period prescribed by law.

2.17.2 Owner Option

The Contractor shall expediently correct all deficiencies brought to his attention in writing by the Owner or Owner's Consultant. If, in the opinion of the Owner, the Contractor fails to correct deficiencies, or fails to act expeditiously to correct deficiencies, the Owner may:

2.17.2.1 Accept Deficiencies

Accept the deficiencies in the Work, and reduce the Contract Sum of the Contractor at fault by a unilateral Change Order issued and signed by the Owner in an amount to be determined by the Owner.

2.17.2.2 Deficiencies Removed

Have the deficiencies removed in any reasonable manner available to the Owner, and charge the Contractor at fault for the costs incurred, or reduce that Contractor's Contract Sum by a unilateral Change Order issued by the Owner for the costs incurred.

2.18 Cost of the Work

The Contractor shall pay all costs of the Work including, but not limited to, labor, materials, equipment, tools, transportation, freight, taxes, royalties, patent fees, support facilities, construction equipment, water, heat, utilities, supervision, overhead, and all other items necessary for the proper execution and completion of the Work.

2.19 Legal Compliance

The Contractor shall comply fully with all laws, statutes, ordinances, rules, regulations, codes, and lawful orders applicable to their work, including employment regulations, unless specifically exempted from compliance by the Contract Documents. Where local codes differ from codes of broader jurisdictions, the more stringent code shall apply. The Contractor shall promptly notify the Owner in writing, of items in the plans or specifications for this project that violate any applicable codes.

2.20 Permits

Unless otherwise specifically stated in the Contract Documents, the Contractor shall apply for, secure, and pay for all permits, licenses, and fees. The Contractor shall schedule, conduct or perform all tests, and give all notices required by governmental units for the Work of his Contract.

2.21 Site Housekeeping

The Contractor shall be responsible for his own site housekeeping and clean up of any waste generated in the execution of his Work. Unless otherwise specified, the Contractor is responsible for suitable off-site disposal of their waste and debris.

2.22 Cleanup

Clean all equipment at time of substantial completion including the interiors and exteriors of all cabinets, furniture, and equipment enclosures. Clean out all debris and rubbish related to the installation of all components for all work locations within the building. All equipment shall appear in first class new condition.

2.23 Cutting and Patching

Do all cutting and patching necessary for installation of work with approval of the Owner. Do not impair strength or function of work being cut or patched, e.g., do not weaken structural members; maintain watertight integrity where necessary. Use rotary type drilling tools and concrete cutting saws to cut concrete and masonry walls. Use rotary type drilling tools to cut cabinets where knockouts are not available and cable access is required. Do not use torches for cutting metal.

2.24 Firestopping

Provide firestop as required at all penetrations through fire rated or smoke rated walls, floors, or other surfaces. Replace or reinstall firestop material on all existing penetrations where others have installed firestop.

2.25 Coordinate Schedule

The Contractor shall conduct all work in coordination with the schedule of construction published by the Construction Manager.

The Contractor shall adhere to any and all conduct requirements of the Owner, Owner's Representative, or Construction Manager. It is the contractor's responsibility to familiarize staff with any conduct requirements and adhere to the requirements.

2.26 Attendance at Meetings

The Contractor shall be responsible for attending all meetings as required by the Owner, Technology Consultant and Construction Manager.

2.27 Installation

The Contractor shall adhere to manufacturer's specifications during installation of all hardware.

2.28 Review of Documentation

Upon completion of work, the Contractor shall meet with the Owner to deliver and review system documentation, including test results. The work shall not be considered complete until the Review of Documentation has been completed.

2.29 Acceptance

All construction and installation work shall be done in a thorough and workman-like manner in accordance with the Plans, Specifications, and Construction Drawings and shall be subject to acceptance by the Owner.

2.30 Payment

2.30.1 Submission of Invoice

For this project, an AIA contract will not be created. The School District will issue a Purchase Order directly to the Contractor. Requests for payment must be received by Secant Technologies before the 8th day of the month. AIA form G702/G703 must be submitted along with invoice. Provide three notarized copies of each pay application for approval. The contractor's request for payment will be processed the following month after it is received.

Contractor will not be paid if Certificate of Insurance has not been provided prior to submission of G702/G703 forms. Additionally, if Contractor wishes to request payment for Stored Materials, Certificate of Insurance must state that Stored Materials are insured.

2.30.2 Payment of Invoice

Invoices in question shall be communicated to the Contractor within eight (8) business days of reception.

2.30.3 Retainer

Ten percent (10%) of all invoices will be retained. Retained amount will be paid within 60 days of final acceptance.

3 Project Overview

3.1 Introduction

Kalamazoo Public Schools is soliciting bids from qualified bidders for the following:

Outside plant fiber optic cabling

Kalamazoo Public Schools will award bids to a single or multiple vendors to obtain a final outcome that is in the best interest of the district.

3.2 Work Sites & Scope

All work is inside the Kalamazoo city and township limits:

- KPS Administration Building
- King-Westwood Elementary
- Indian Prairie Elementary

3.3 Project Schedule

Work will begin February 2018 with substantial completion by December 2018. Contractor shall provide the sufficient skilled manpower to complete all work on schedule and according to project phasing requirements, including working additional shifts, weekends and holidays as required. All labor costs, including second shift, weekend and holiday shall be included in the base proposal. Owner will not approve additional labor charges.

3.4 Wage Rate

This project does not require prevailing wage rates.

3.5 Employee Background Checks

All employees of contractors or sub-contractors that will be working on site at any Kalamazoo Public Schools Building must have a criminal background check on file.

The background check shall include a Misdemeanor, Felony and Federal Criminal check, as well as a Sexual Offender check. These checks can be administered by a government agency or by a private company and will be acquired at the contractor's expense. The background check results shall be maintained by the contractor, and names of the candidates who have passed the background checks, submitted to the Construction Manager, Owner, or Technology Consultant if requested. All costs for background checks are the sole responsibility of the Contractor.

3.6 Cable Fire Rating

It is not anticipated that any cabling for this project will be installed into plenum air spaces. However, it will be the responsibility of the Contractor to install cabling that meets all code requirements for burn/smoke rating applicable to the space for which it is being installed.

3.7 Contact

All inquiries for this RFP should be in writing and can be faxed or e-mailed to:

Melissa Miller
Secant Technologies
Fax: 269-375-4222
E-Mail: mmiller@secantcorp.com

3.8 Owner's Technology Consultant

Kalamazoo Public Schools has contracted with Secant Technologies to provide design and project management services for the technology included in this RFP. Contractor will be responsible to coordinate all design and installation details with Owner's Consultant, Secant Technologies.

3.9 Electrical Contractor

Not applicable to this project.

3.10 Pay Application Process

All applications for payment must be submitted by Contractor using AIA Forms G702 and G703. Forms MUST be sent directly to:

Secant Consulting
Project: KPS 2599
6395 Technology Ave.
Kalamazoo, MI 49009

Or e-mail to:
payapplications@secantcorp.com

Failure to follow these instructions will result in delay of payment.

3.11 Warranty

All hardware, equipment, jumpers, patch cords, as well as all workmanship and labor, will be warranted for a period of not less than one (1) year. All standard manufacturer-advertised hardware warranties shall apply.

All warranties will begin immediately following final acceptance of the completed project, as determined by the Owner. Contractor is required to register all warranty information with manufacturers if the warranty requires registration.

Structured Cabling also has a requirement for (20) year Panduit-certified warranty. Refer to Structured Cabling section for detail.

3.12 General Installation

The Vendor will be responsible to furnish, set in place, and install all equipment, unless otherwise noted. The installation process includes, but is not limited to the following:

Receive all equipment on behalf of the Owner.
Provide inventory receipt of all equipment to Owner.
Store all equipment until the equipment is installed according to specifications.
Transport devices and all components to designated locations.
Cable and configure all components as needed.
Complete control system programming as specified.
Demonstrate successful installation.
Maintain inventory and status documents and discard all trash packaging at locations designated by the Owner.
Asset tagging of any/all equipment as required by Owner.
Owner Orientation and Training.

3.12.1 Asset Tagging

Owner will provide asset tags for major equipment components. Vendor shall affix tags to equipment as instructed by Owner and shall maintain an asset tag worksheet that records the type of equipment, serial number and installation location for all items tagged. Asset tagging shall be coordinated with the Technology Department.

3.12.2 Workmanship

All work shall have a finished appearance. The contractor shall supply and repair / install all trim, covers, fixtures, carpet, ceiling tile, paint, hardware, brackets, etc., as needed.

3.12.3 Floor Plans and Diagrams

The floor plans and diagrams provided with this document are considered part of this specification document.

3.13 Proposal Format

3.13.1 Bid Forms

All bidders submitting a response to this RFP must complete all bid forms provided. At least three references must be provided on the Technology Reference form. Bid forms are available in Microsoft Word format upon request. References shall be for K-12 school projects of similar size and functional scope.

3.13.2 Executive Summary

Bidders should include an executive summary that gives an overview of their response. Please include any pertinent information not specifically asked for on the bid forms.

3.13.3 Cut Sheets

Include manufacturer cut sheets for key components used in your design. Cut sheets are not required for items that exactly match the specified models in this RFP.

3.13.4 Voluntary Alternates

Voluntary alternates are welcomed. Voluntary alternate products will not be evaluated, or approved, prior to acceptance of bids. For any alternate, provide a detailed materials list (including line item pricing), cut sheets, and executive summary explaining your alternate design and its benefits. As a minimum consideration, all voluntary alternate products must meet/exceed all specifications of products used as the basis of design. Both technical and warranty specifications will be considered. Voluntary alternates shall be listed separately from the base-bid. All bidders shall respond to the RFP using the products listed in the basis of design as the base-bid. Voluntary Alternates are to be listed separately in bid response.

3.14 Bid Evaluation

It is the intent of the Owner to select the bid response that provides the greatest long-term value to the Owner. This may not be the response with the lowest initial purchase price. Factors including, but not limited to the following, shall be used in the process of evaluating bids:

Completeness of response, including detailed line item parts list with itemized pricing
Provides lower long-term cost of ownership
Vendor's experience with K-12 projects of similar scope
Expertise and certification of vendor's staff
Locale of vendor's nearest full-time-staffed commercial service location
Vendor's K-12 references for systems of similar scope
Flexibility of solution to expand and change over time
Performance on past KPS projects
Performance on past projects managed by the technology consultant
Initial purchase price

3.14.1 Bid Award

Owner will, at its sole discretion, award the project(s) to a vendor(s) of its choice. Owner may elect to not award any or all sections of the RFP. Owner reserves the right to award individual sections of work, and/or award individual school locations to different vendors.

Bidder, by submitting bid, agrees to honor line item individual component pricing submitted on bid forms for the final quantity determined by Owner. Owner may elect to eliminate any individual line item or combination of line items contained on bid forms prior to contract award. Bid prices must be honored for 90 days from the bid due date.

4 Technical Specifications

4.1 Work Summary

Work covered by this section includes:

- Permits and licenses
- Aerial fiber optic cable installation, labeling and termination
- Utility make ready coordination with pole owners
- Underground fiber pathway and fiber installation
- Documentation

4.1.1 Project Description

This project will provide approximately one mile of new 24-strand aerial single mode fiber for the new KPS Transportation Building. The new fiber will be spliced to existing KPS fiber. Existing strands, serving other buildings, will be repurposed to provide connectivity between the KPS Transportation Building and the KPS Administration Building.

4.2 Utility Engineering Fees

Utility (pole owner) engineering and design fees are not included in this contract. Utility engineering fees will be paid directly by the Owner to the pole owners. The Contractor shall be responsible for verbal, written, and in-person coordination efforts, drawings and other document as required to request engineering services from the utilities involved.

4.3 Make-ready Costs

Make-ready fees from pole owners are not included in this project. Make-ready fees will be paid directly by the Owner to the pole owners. The Contractor shall be responsible for verbal, written, and in-person coordination efforts with the Utilities involved during the make-ready process.

4.4 Extended Warranty

All installed components as well as all workmanship and labor, shall be warranted for a period of not less than two (2) years.

All warranties will begin immediately following the network acceptance as determined by the Owner.

4.5 General Specifications

4.5.1 Floor Plans and Diagrams

The site plans and diagrams provided with this document are considered part of this specification document.

4.5.2 Fiber Route

The drawings show the proposed route of the primary conduits, hand hole locations, roadway crossing locations and fiber maker locations. All distances indicated are approximate. Contractor is to field verify all measurements prior to ordering materials.

4.5.3 Permits and Licenses

It shall be the Contractor’s responsibility to obtain and pay for all required permits.

4.5.4 Existing Utilities

The contractor is responsible for locating all existing underground services including electrical, telephone, data, water, sewer and gas prior to beginning any underground work. Coordinate with Miss Dig for public utilities.

4.5.5 Details Not Shown

Details not shown or specified, but necessary for the proper installation and operation, shall be included in the work and in the Contractor’s bid. The Contractor shall be responsible for all accessories necessary to make the system complete in all respects and ready for operation, even if not particularly specified. All necessary components shall be furnished, delivered, and installed by the Contractor without additional expense to the Owner.

4.5.6 Design Review

The Contractor shall conduct a detailed design review of these systems prior to ordering supplies and equipment. This design review shall be held at the Consultant's facility. All drawings, schematic, material lists, and details shall be submitted for approval within 30 days after contract is awarded.

4.5.7 Site Survey

Contractor shall survey work site to familiarize the installation team with local conditions. Review plans, specifications and site. Verify the job overview and special requirements with Consultant.

4.5.8 Specifications

Should it appear that the work to be done is not sufficiently detailed or explained in the plans or specifications, the Contractor shall apply to the Consultant for such further explanation as may be necessary and shall conform to such explanation or interpretation as part of the contract.

4.5.9 Qualifications

The Contractor shall provide experienced installers who are certified, licensed, or otherwise qualified by the manufacturer as having the necessary experience, staff, and training to install the manufacturer's products per specified requirements. A manufacturer's willingness to sell its products to the Contractor or to an installer engaged by the Contractor does not, in itself, confer qualification on the buyer.

The Contractor shall have a minimum of three (3) year's experience in the installation of Outside Plant Fiber Optic Systems.

4.5.10 Workmanship

All work shall have a finished appearance. The contractor shall supply and repair/ install all trim, covers, fixtures, carpet, paint, hardware, brackets, landscape, etc., as needed.

Acceptable Manufacturers

Subject to compliance with requirements and cable system warranty, provide products by one or more of the following:

- Corning
- Berk-Tek
- Draka
- OFS
- Prismium

4.5.11 Landscape Restoration

Contractor shall restore landscape to original condition after installation work is complete. Remove from site any excess fill material. Compact and level any disturbed soil to restore to original grade. Reseed grass in areas where existing grass has been disturbed using hydro-seeding method with green mulch.

4.5.12 Applicable Standards

This installation will be in accordance with but not limited to the following standards:

- NFPA 70-2005, National Electric Code
- TIA/ EIA-607, Commercial Building Grounding and Bonding Requirements for Telecommunications
- TIA/ EIA-758- 1 Addendum 1, OSP Optical Fiber Cabling Practices
- ASTM International, F 2160, "Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD)
- ASTM International, F 2176, "Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct."
- ASTM International, D 3350, "Standard Specification for Polyethylene Plastics Pipe and Fittings Materials"
- ASTM International, F 1290, "Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings"

- ASTM International, D 2657, “Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings”
- ASTM International, D 2683, “Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing”
- ASTM International, F 1056, “Standard Specification for Socket Fusion Tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings”
- National Electrical Manufacturers Association, NEMA TC 7, “Smooth-Wall Coilable Polyethylene Electrical Plastic Conduit”
- Underwriters Laboratories, Inc., UL 651B, “Continuous Length HDPE Conduit”
- Underwriters Laboratories, Inc., UL 2024, “Optical Fiber Cable Raceway”
- UL 651A
- Plastics Pipe Institute, Inc., Handbook of Polyethylene Pipe
- BICSI Structured Cabling Standards and Practices

If any discrepancies exist between these standards and the technical specifications of this document, the technical specifications of this document will apply.

4.5.13 Grounding and Bonding

The contractor will be responsible for grounding all equipment installed in accordance with grounding standards listed above.

4.5.14 Lightning Protection

The Contractor shall furnish and install lightning protection and grounding systems in accordance with these Specifications and industry standards.

4.6 Fiber Optic Cable

Single Mode Fiber Optic Cable shall be Corning FREEDM LST Gel-Free or equivalent with the following characteristics:

Wavelength (Nm)	Maximum Attenuation (dB/Km)
1310	0.4
1383	0.4
1550	0.3

The mechanical and environmental specifications for indoor/outdoor fiber optic cable shall be in accordance with ANSI/ICE S-83-640.

All fibers in the buffer tube shall be usable fibers and shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of these Specifications.

The coating shall be dual layered, UV-cured crylate; the coating shall be mechanically strippable without damaging the fiber.

The cable shall comply with the optical and mechanical requirements over an operating temperature range of –40° C to + 70° C.

Each fiber shall be distinguishable from others in the same tube by means of color-coding and shall meet EIA/TIA-598 (Color Coding of Fiber Optic Cables).

All cable shall be appropriately rated for the specified applications and to the conditions to which they will be exposed.

Cable shall be riser or plenum rating as required by the installation environment.

4.7 Fiber Termination

4.7.1 Fiber Patch Panels

Fiber termination cabinets shall be rack-mount or wall-mount style and must provide storage space for fiber management and splices.

Cabinets shall be sized to hold all fiber strands in the entrance cable. Cabinets shall be loaded with the number of SC couplers required to house all terminated fibers.

SC couplers shall be duplex and shall be blue in color.

All spare couplers shall have dust covers on both sides.

Cable accesses shall have grommets.

The fiber optic distribution patch panels shall be sized to contain sufficient connector module housing to handle the associated cables and their respective breakouts.

4.7.2 Fiber Connectors

Fibers shall be terminated with SC single-mode connector with ceramic ferrule and shroud. At existing sites where ST connectors are in use these shall remain.

4.8 Equipment Racks

Where space permits, install fiber patch panels into existing 19” equipment racks. Coordinate exact location of fiber terminations with building owner.

4.9 Fiber Splicing

4.9.1 Fiber Optic Cable Splicing

Splices shall meet the requirements of ANSI/TIA/EIA standards.

The splice location must have provisions for storing the resulting slack cable after splicing is complete.

All slack shall be physically protected.

All splicing shall be fusion splice; the maximum splice loss shall be 0.1 dB or less in accordance with ANSI/TIA/EIA 0568-A.

4.9.2 Fiber Optic Cable Break-Out

The jacketed cable shall be lashed with tie-wraps to the rack prior to entering the cabinets and when entering handholes.

The cable shall also be tie-wrapped to the inside of the fiber patch panel near point of entry.

The jacketed area and bare fibers shall be cleaned to remove any moisture blocking gel.

The transition from the buffer tube to the bundle of jacketed fibers shall be treated by an accepted procedure for sleeve tubing, shrink tube and silicone blocking of the transition to prevent future gel leak.

All fiber terminations shall include the use of a fan-out kit to protect loose tube fibers running from the buffer tube to the fiber connector.

4.9.3 Fiber Optic Splice Closures

The fiber optic splice closure for all single mode fiber optic runs shall be intended for outdoor buried applications and shall conform to the following Specifications:

The fiber optic splice closure shall be suitable for a temperature range of -10 ° C to 50 ° C.

The size of the closure shall allow for all the fibers of the largest fiber optic cable to be spliced to a second cable of the same size, plus 12 additional pigtails. The closure shall be not more than 36 inches in length and not more than 10 inches in diameter. The two outer closures shall fit into the fiber optic splice vault and shall leave sufficient space for routing of the fiber optic communications cables, without exceeding the minimum bending radius of any cable.

The closures shall be designed for butt splicing.

All materials in the closure shall be non-reactive and shall not support galvanic cell action. The outer closure shall be compatible with the other closure components, inner closure, splice trays, and cables.

The outer closure shall protect the splices from mechanical damage, shall provide strain relief for the cable, and shall be resistant to corrosion.

The splice closure shall be waterproof, re-enterable, and shall be sealed with a gasket.

4.10 General Fiber Installation

Installations of the Fiber Optic Network shall be in strict accordance with manufacturer's recommendations.

Follow all of the manufacturer's guidelines and industry standards on handling and installing fiber optic cable.

The installation of the fiber optic cable shall conform to the NEC standard and NESC standard.

The fiber optic cable plan shall be installed in accordance with the following guidelines:

Do not exceed the manufacturer's maximum tensile rating.

No more than two 90-degree changes of direction in any single cable pull.

Mechanical aids may be used, provided that a tension-measuring device is used at the end of the cable and the allowable tension does not exceed the manufacturer's recommended pulling tension.

The fiber optic cable shall be installed using a cable pulling lubricant recommended by the manufacturer and a non-abrasive pull tape.

Insure that the bend radius of the cable is no less than twenty times the cable's outside diameter during installation, and that the bend radius of the cable is no less than ten times the cable's diameter when permanently installed.

Make circuitous pulls by back feeding or center pulling. When a winch or pulling machine is used during installation, use a dynamometer to monitor the tension on the cable. No residual tension can remain on the cable after installation except that due to the cable's weight in the vertical rise.

Dress all cables in a neat work-man-like manner in strict accordance with industry-wide standards. The Contractor, at their expense, shall replace any cables that have had excessive strain and tension applied to them.

4.11 Aerial Cable Installation

4.11.1 Clearances

Before starting construction and installation, determine if enough clearance exists between the cable and other utilities, as well as clearance to the ground, roadway, railway or water surface below. If applicable, the clearance requirements in the latest issue of the National Electrical Safety Code (NESC) must be met throughout the cable plant.

4.11.2 Support Strand

Cable shall be supported by lashing to a 1/4" to 7/16" support strand. Before actual installation, determine the tension that will be applied to the support strand under various loading conditions and span lengths.

4.11.3 Reel Positioning

As the payout trailer is set up, the center of the cable reel to be paid out should be positioned so that the cable pulls from the center of the reel, directly into the first roller or chute, and along the line of sight directly with the strand.

The cable reel flanges should be parallel with the strand - not at an angle.

4.11.4 Pulling Grip

A swivel-type pulling grip shall be used to attach the pulling line to the cable. A fuse-type pulling swivel, which separates at a predetermined level of force, can also be used. The force should be selected to match the cable being pulled and the manufacturer's recommended maximum pulling tension.

4.11.5 Cable Chute

A cable chute or 45° corner block shall be used to guide the cable being paid off from the reel onto the mid-span blocks. Multiple chutes or rollers should be used when multiple cables are being pulled.

4.11.6 Cable Rollers

Cable rollers must be placed on the support strand at least every 30 feet to support the cable as it is being pulled between poles.

4.11.7 45° and 90° Turns

In a typical installation, turns of 45° or 90° may be required as the cable is pulled along the strand, necessitating use of the proper 45° and 90° corner blocks and pole brackets to support them. The cable blocks must be positioned so that the cable is tangent to the bend.

4.11.8 Lashing Wire

All exterior loose tube fiber shall be secured to the support strand by two (2) lashing wires. All lashing wire shall be stainless steel.

Control lashing wire tension to ensure cable is supported by the support strand without restricting cable movement.

4.11.9 Fiber Storage Units

Provide Fiber Storage Units or “snow-shoe” for fiber slack storage along the support strand. Fiber Storage unit shall have a minimum bend radius of 10 inches and shall be sized to accommodate the fiber cable diameter.

4.11.10 Cable Protector

Provide and install cable protector and cable marker at each pole attachment. Marker shall be constructed of UV resistant, rigid plastic in telecommunications orange with black legend “CAUTION FIBER OPTIC CABLE”.

4.12 Underground Cable Installation

Where required, install cable underground using trenching or directional boring as required by site conditions.

4.12.1 Existing Services

The contractor is responsible for locating all existing underground services including electrical, telephone, data, water, sewer and gas prior to beginning any underground work. Coordinate with Miss Dig for public utilities and with owner for private utilities.

4.12.2 Conduit

Underground conduit shall be High Density Polyethylene (HDPE), with wall thickness of SDR-11. Conduit shall be rated for installation by plowing and directional boring.

4.12.3 Continuous Runs

All installed conduit runs are to be continuous from handhole to handhole without splices or couplers.

4.12.4 Conduit Installation in Open Areas

Installation of conduit may be performed using open trenching, continuous trenching, vibratory plowing or directional boring as dictated by site conditions.

4.12.5 Conduit Installation under Roadways

All conduits installed under existing driveway and roadways shall be installed using directional boring.

4.12.6 Conduit Installation near Utilities

Contractor is to exercise extreme caution when installing conduit in close proximity to existing underground utilities. Utilize hand digging as required to avoid damaging existing utilities.

4.12.7 Pull Tape

Conduit runs not occupied with fiber optic cable and which are longer than 50 feet are to be provided with a polyester pull tape. Pull tape shall exit each end of conduit by a minimum of three feet and shall be secured.

4.12.8 Conduit Caps

All unused conduits shall be capped to reduce the chance of dirt and water infiltration. Caps shall be sized to fit the conduit installed. Caps shall be Carlon EC1.900 or equivalent.

4.12.9 Installation Depth

Underground conduit will be installed a minimum of three (3) foot below grade, unless noted otherwise.

4.12.10 Tracer Wire

Tracer wire shall be Copperhead Industries Direct Burial #12 AWG Solid (.0808” diameter), steel core hard drawn extra high strength horizontal directional drill tracer wire, 1150# average tensile break load, 45 mil high molecular weight-high density yellow polyethylene jacket complying with ASTM-D-1248, 30 volt rating.

Tracer wire shall be placed continuously in all trenches, exterior to the underground conduits, and bonded to grounding rods within a handhole or manhole.

4.12.11 Grounding

Grounding rods shall be 5/8" by 8-foot copper-coated steel and shall be installed at no more than 1 km spacing.

4.12.12 Warning Tape

Orange warning tape is required in all trenches containing conduit. The warning tape shall have bold black legend "CAUTION – BURIED FIBER OPTIC CABLE" with letters approximately 1 inch high and repeated at approximately three-foot intervals. The warning tape shall be 100 mm wide. Warning tape shall be Carlon MAT3O21 or equivalent.

4.12.13 Depth

Install warning tape 18 inches below grade.

4.12.14 Above Ground Markers

Provide above ground marker posts along the fiber path. Markers shall be orange in color/ Markers shall be Rhino FiberCurve or equivalent.

Provide a marker at the following locations along the conduit pathway:

One every 500 feet along the conduit pathway

One at each building entrance

One at each change in conduit direction

At any additional locations as indicated on provided drawings

4.12.15 Marker Decal

Install decal with "WARNING FIBER OPTIC CABLE" and "NO DIG" graphic on each side of marker post.

4.12.16 Handholes

Provide handholes along the conduit pathway to accommodate fiber installation and to hold splice cases and fiber maintenance loops. Minimum handhole size shall be 24" wide by 36" long by 30" deep. Handholes are to be installed in non-traffic locations and shall be constructed of polymer concrete or HDPE. Handholes shall be PenCell PEM-2436PC or equivalent.

4.12.17 Locations

Provide a handhole at the following locations along the conduit pathway:

One every 1000 feet along the conduit pathway to assist in fiber installation

One at each building entrance

One at each change in conduit direction

At any additional locations as indicated on provided drawings

4.12.18 Covers

Handhole cover shall be constructed of polymer concrete and shall be embossed with "FIBER OPTIC".

4.12.19 Gravel Base

Provide a minimum 8-inch washed gravel base under each handhole for drainage.

4.12.20 Handhole Installation

Install handholes level with the existing grade. Properly support handhole during backfilling and compaction of soil to prevent deformation of handhole. Verify that cover fits properly after backfilling is completed.

4.12.21 Subduct

All underground cable shall be installed in protective nonmetallic flexible raceway or subduct. Subduct shall be manufactured from High Density Polyethylene (HDPE) for use in underground and innerduct applications and shall have a minimum diameter of 1.5 inch.

4.13 Building Entrances

The Contractor shall install fiber into the building MDF of each building as noted on provided drawings.

Refer to the provided entrance drawings for suggested entrance route. Contractor may propose alternate entrance pathways. Any change to entrance pathways must be approved by Consultant prior to the start of work.

4.14 Interior Cable Pathways

4.14.1 Cable rating:

All fiber optic cable routed into buildings shall be indoor/outdoor plenum rated.

4.14.2 Innerduct

Provide a 1.5” innerduct from the building entrance to the MDF. Innerduct must be riser or plenum rated as required by the installation environment.

4.14.3 Cable Routing

All cable is to be concealed, either installed above drop ceilings, in access tunnels or in surface raceway. No exposed cable is allowed.

The cabling contractor may be required to install raceway or corings to complete routing of fiber inside building. The specification below applies to any raceway installed.

Installation methods must follow TIA/EIA-568B standards including cable support, pulling force, minimum bend radius and minimum distance from sources of electrical interference.

4.14.4 Wall Penetrations

Wall penetrations or corings must be provided with EMT sleeves and protective bushings to prevent damage to cable as it is pulled through sleeves. The maximum fill for all sleeves shall not exceed 60 percent of capacity. This will allow sufficient space for fire-stopping material.

4.14.5 Fire-stopping

All wall and floor penetrations must make use of EMT sleeves. Any penetrations of firewalls must be fire-stopped using an UL-approved material to restore the wall to its original fire rating. Proper fire-stopping is not possible if penetrations exceed a 60% fill ratio. Fire-stopping material must be removable to allow future cable system upgrades.

4.14.6 Cable Support

Cables must be supported at least every five feet. Cable trays and Caddy “J” hooks are the preferred method of cable support.

4.15 Maintenance loops

The following maintenance loops must be provided along the fiber path to accommodate moves and repairs.

4.15.1 Fiber Patch Panel

Provide neatly coiled and secured to a rack or backer board, a minimum 25-foot fiber maintenance loop at each fiber patch panel or cabinet.

4.15.2 Interior Splice

Provide, neatly coiled and secured to a rack or backer board, a minimum 25-foot fiber maintenance loop at each side of an interior splice.

4.15.3 Exterior Aerial Splice

Provide a 100 to 150-foot fiber maintenance loop at each side of an exterior splice enclosure. Cable shall be neatly dressed using a fiber storage unit or “snow-shoe”.

4.15.4 Aerial

Provide a 100 to 150-foot fiber maintenance loop at intervals of 2,000 feet along the aerial pathway between splice enclosures. Cable shall be neatly dressed using a fiber storage unit or “snow-shoe”.

4.16 Cable Identification

4.16.1 Cable ID Format

Each fiber cable will be assigned a unique cable ID that identifies the segment of the fiber backbone.

4.16.2 Aerial Fiber Optic Cable

Furnish and install smear-resistant computer-generated vinyl film, tie-on labels to identify all installed cables in compliance with specified identification scheme. Labels shall be permanently fixed to cables. Labels shall identify the owner of the fiber and provide contact phone number.

4.16.3 Indoor Fiber Optic Cable

Furnish and install smear-resistant computer-generated vinyl film, self-laminating labels to identify all installed cables in compliance with specified identification scheme. Labels shall be permanently fixed to cables. Labels shall be Brady labels or approved equal.

Cables will be labeled at each termination point and at each side of all splice points.

4.16.4 Fiber Patch Panel Labels

Fiber patch panels shall be labeled so the origin and termination of all strands are readily apparent. Each fiber coupler will be labeled with the number of the fiber strand.

4.17 Testing

4.17.1 Fiber Testing

All fiber cables shall be tested using a laser source and power meter to record optical characteristics. Test must be performed at all frequency ranges appropriate for the fiber and must be performed in each direction. The tester must maintain an electronic log of test results. Each cable must be identified on the test equipment using its correct Cable ID and strand number.

Any cable that does not pass the testing requirements must be repaired or replaced at the contractor's expense. Any cables that are damaged during installation must be replaced.

Test results shall be presented to the client in both printed format and on CD-ROM in Excel format and in the raw format exported from the test equipment. The model and software version of the test equipment must be shown in a README file on the CD-ROM.

4.17.2 End-to-End Attenuation Test

Perform end-to-end attenuation test on all fibers to measure the optical power loss between cable termination points. Measure the end-to-end attenuation of the single mode fibers at the wavelengths of 1310 nm and 1550nm.

Utilize a stabilized light source and optical meter, and follow test procedure, which complies with EIA/TIA 526-14, Method B: Bi-Directional Optical Power Loss Measurements Of Installed Single Mode Fiber Cable Plant.

A fiber optic loss budget shall be computed using the specified loss for cable, connectors, and all other components. Actual measured loss must be no greater than the calculated loss budget plus a margin of 2 dB to be considered passing.

OTDR tests shall be performed at the wavelengths of 1310nm and 1550nm and must provide a complete graphic representation of the cable, as well as all associated losses.

4.18 Project Close Out

The contractor shall provide the documentation specified below to the owner and consultant at completion of the project.

4.18.1 Fiber Route Map

Provide a fiber route map showing the routing of all fibers along with street names, fiber strand counts, fiber segment lengths, and splice locations. Fiber route map shall show the routing of fiber to the building MDF. Provide four printed copies and four electronic copies on CD-ROM in DXF or Acrobat PDF format.

4.18.2 Fiber Splicing Records

Provide a record of all fiber splicing detailing the physical location of all splices and the allocation of all fiber strands of each cable. All spare fiber strands that are available for future use at each splice location must also be detailed. Provide four printed copies and four on CD-ROM in Excel or Acrobat PDF format.

4.18.3 Test Data

Provide all fiber test results. Provide four printed copies and four electronic copies on CD-ROM in Excel format or Acrobat PDF format.

4.19 Alternates

4.19.1 Annual Costs

Provide an estimate of the annual cost of all right-of-way and pole attachment fees associated with the aerial fiber route that the Owner will be obligated to pay.

4.19.2 Optional Service Contract

If your organization offers service contracts for on-going fiber maintenance, provide pricing. Provide the annual cost of a service contract for fiber, details on what is included in the contract, and what would be treated as additional costs to the Owner.

5 Intent to Bid

Intent to bid form must be returned via fax or e-mail by to:

Melissa Miller
Secant Technologies
Fax: 269-375-4222
Email: mmiller@secantcorp.com

Company Name: _____

Address: _____

_____

_____

Contact Name: _____

E-Mail Address: _____

Phone: _____

Fax: _____

6 Vendor Profile

Company Name: _____

Address: _____

_____

_____

Contact Name: _____

E-Mail Address: _____

Phone: _____

Fax: _____

Date Founded: _____ Number of employees: _____

Total revenue last fiscal year: _____

Type of Organization (Corporation, Partnership, LLC, etc.): _____

Has organization ever had a contract terminated prior to completion: _____

Has organization ever failed to complete a project: _____

Has organization ever filed for bankruptcy, reorganization or receivership: _____

Number of full-time technicians qualified to perform work on this project: _____

Has organization ever been involved in a lawsuit with Owners, Engineers or other contractors within the last five years: _____

Name of Project Manager: _____

List relavent certifications: _____

_____

_____

_____

The undersigned certifies to the accuracy of the information provided on this form and attachments.

Signature: _____ Date: _____

Title: _____

7 Familial Disclosure Form

7.1 Statement of Disclosure

All proposals shall be accompanied by a notarized statement disclosing any familial relationship (or lack of a relationship) that exists between the Owner or any employee of the bidder and any member of the Board of Education of the Kalamazoo Public Schools or the Superintendent of the School District.

The District shall not accept a bid that does not include a sworn and notarized disclosure statement.

7.2 Disclosure Form

Kalamazoo Public Schools
1220 Howard St.
Kalamazoo, MI 49008

Dear Ladies and Gentlemen:

I/We the undersigned acknowledge the details stated in the “Statement of Disclosure” above, regarding familial relationship (or lack of) that exists between the Owner or any employee of the bidder and any member of the Kalamazoo Public Schools Board of Education or the Superintendent of the School District.

[ ] We have prior familial knowledge of parties involved. (Attach clarification.)

[ ] We have no prior familial knowledge of parties involved.

_____
Signature

_____
Company Name

_____
Notary Public

_____ County, State _____

My Commission Expires: _____

8 Iran Economic Sanctions Act Affidavit of Compliance

Michigan Public Act No. 517 of 2012

The undersigned, the owner or authorized officer of the below-named contractor (the "Contractor"), pursuant to the compliance certification requirement provided in the Kalamazoo Public Schools (the "School District") RFP for **Transportation Building Fiber** (the "RFP"), hereby certifies, represents and warrants that the Contractor (including its officers, directors and employees) is not an "Iran linked business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event Contractor is awarded a contract as a result of the aforementioned RFP, the Contractor will not become an "Iran linked business" at any time during the course of performing any services under the contract.

The Act defines an Iran Linked Business as an individual or any entity, including all successors, parent companies, subsidiaries and companies under common control, engaged in investment activities of $20,000,000.00 or more with the energy sector of Iran, including providing products used to construct or maintain oil or liquefied natural gas pipelines.

The Contractor further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 (or 2 times the amount of the contract, or proposed contract, for which the false certification was made), whichever is greater. Additionally, the cost of the School District's investigation, and reasonable attorney fees, will be added to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a Request for Proposal for three (3) years from the date it is determined that the person has submitted the false certification.

The District shall not accept a bid that does not include a sworn and notarized Affidavit of Compliance.

_____

Signature

_____

Company Name

_____

Notary Public

_____ County, State _____

My Commission Expires: _____

9 Technology Vendor References

Include at least three references for similar K-12 projects in West Michigan.

Customer Name: _____

Address: _____

Contact Name: _____

Contact Title: _____

Phone: _____

E-Mail Address: _____

Date Started & Completed: _____

Dollar Amount of Project: _____

Comments: _____

_____

_____

Customer Name: _____

Address: _____

Contact Name: _____

Contact Title: _____

Phone: _____

E-Mail Address: _____

Date Started & Completed: _____

Dollar Amount of Project: _____

Comments: _____

_____

_____

References Continued

Customer Name: _____

Address: _____

Contact Name: _____

Contact Title: _____

Phone: _____

E-Mail Address: _____

Date Started & Completed: _____

Dollar Amount of Project: _____

Comments: _____

_____

_____

Customer Name: _____

Address: _____

Contact Name: _____

Contact Title: _____

Phone: _____

E-Mail Address: _____

Date Started & Completed: _____

Dollar Amount of Project: _____

Comments: _____

_____

_____

10 Bid Forms

FOR: Kalamazoo Public Schools
Project 2599 – Transportation Building Fiber

TO: Kalamazoo Public Schools
600 W. Vine St.
Kalamazoo, MI 49006

PROPOSAL BY: _____

(Name & address) _____

_____

_____

BASE BID: We, the undersigned, having familiarized ourselves with local conditions affecting the cost of work and with the bidding documents on file at the office of the Owner, hereby propose to perform the work required by said bidding documents in a workman-like manner for the Bid Categories as shown on this bid form for the above-named project in accordance with contract documents as prepared by the Owner for the amounts hereinafter stated, such amounts constituting the base bid, including **Addendum No.(s):**

_____

Acknowledge all Addenda #'s and dates on line above

10.1 Exceptions

State any exceptions taken to project specifications:

_____

_____

_____

10.2 Base Bid

Indicated amounts are to include performance bond.

Single Mode Fiber Optic Cabling ..... $ _____

Performance bond ..... $ _____

Total Base Bid…… ..... $ _____

10.3 Performance and Materials Bond

Bond cost per $1000 of project cost ..... $_____

10.4 Alternates

Estimated annual pole attachment fees ..... $_____

Optional Annual Service Contract ..... $_____

Attach details on what is included in the service contact.

10.5 Voluntary Alternates

VOLUNTARY ALTERNATES: Attach a separate sheet if proposing Voluntary Alternates. Prices shall include all applicable costs for taxes, insurance, bonds and fees

10.6 Cut Sheets

Include manufacturer cut sheets for key components used in your design. Cut sheets are not required for items that exactly match the specified models in this RFP.

10.7 Signature

In submitting this bid, we understand the right is reserved by the Owner to reject any or all bids. It is further agreed that this bid is binding for the period of ninety (90) days. Signature is to be a physical signature (ie. – not typed or electronic) provided by an Office of the Company or personnel authorized to obligate the bidding company for the dollar amounts listed in base-bid section

DATE _____ 2018

FIRM NAME _____

BY _____ _____

(Authorized Signature) (Typed or Printed Signature)

TITLE _____

OFFICIAL ADDRESS _____

_____

PHONE NO._____ FAX NO._____