

December 18, 2017

SHELBY COUNTY BOARD OF EDUCATION
PROCUREMENT SERVICES

160 South Hollywood Street, Room 126 †Memphis, Tennessee 38112-4892 †Phone (901) 416-5376

(This proposal will not be accepted electronically or by facsimile. All proposals must be mailed or delivered to the above address.)

REQUEST FOR PROPOSAL
(NOT AN ORDER)

Please submit proposals on the item(s) listed below. The right is reserved to reject any or all Proposals. If substitutions are offered, give full particulars. **24th of January 2018 @ 2:00 p.m., cst.**

Board of Education reserves the right to accept or reject any or all proposals, or any part thereof, and to waive any minor informalities and/or technicalities that are deemed to be in the best interest of the Shelby County Board of Education. Successful Bidder shall be paid only when delivery is complete. **For the appropriate purchases, all material data safety data sheets (MSDA) must accompany all shipments covered under Tennessee Hazardous Chemical Right to Know Law- Tennessee Public Chapter #417- House Bill #731.*

PROPOSAL FOR- NETWORK CABLING (CONTRACTOR and E-RATE CONTRACTOR)

The Shelby County Board of Education (“SCBE”) request proposals for Network Cabling and Wiring Service Providers for the provision of services related to installation and maintenance of various types of Network Cabling, Fiber Optical Cabling and Associated Electrical Wiring.

Proposals MUST be received by Shelby County Schools (“SCS” or “District) by the due date and time set forth above.

Questions or requests for clarification of technical issues and terms pertaining to this RFP must be submitted in writing via e-mail to albrightw@scsk12.org, and received by SCBE no later than January 4, 2018 @ 12:30 p.m., cst.

ISSUED BY: Wanda Albright

RFP# 01242018

We propose to furnish the item(s) and/or services outlined in the proposal at prices quoted and guarantee and as specified. Proposals are submitted with a declaration that no Shelby County Board of Education Member or employee has a financial or beneficial interest in this transaction.

INVOICES WILL BE PAID ACCORDING TO NEGOTIATED TERMS

NAME OF FIRM

PHONE

FAX

ADDRESS

EMAIL-ADDRESS

CITY

STATE

ZIP CODE

___ CHECK HERE IF YOU ARE A MINORITY VENDOR

PRINT AUTHORIZED REPRESENTATIVE NAME

REQUEST FOR PROPOSAL

SUBJECT: **NETWORK CABLING CONTRACTOR (E-RATE CONTRACTOR)**

DATE: **December 18, 2017**

PROPOSAL DUE DATE: **January 24, 2018**

PROPOSAL DUE TIME: **2:00 P.M.**

The Shelby County Board of Education (SCBE) is requesting bids for the installation of network, fiber optic cabling and associated electrical wiring and maintenance repairs for general and E-rate services in accordance with School and Libraries Division (SLD) of the Universal Service Administrative Company (USAC). SCBE reserves the right to award a contract to one or multiple suppliers based on SCBE policy and USAC regulations and requirements.

Proposals **SHALL** be received by SCBE by the due date and time set forth above. Questions regarding general submission of Proposals may be directed to SCBE via telephone at (901) 416-5401.

Questions or requests for clarification of technical issues and terms pertaining to this RFP must be submitted in writing via e-mail to albrightw@scsk12.org and must be received by SCBE no later than **2:00 P.M./CT on January 4th, 2018**. Subject line of email shall read **“NETWORK CABLING CONTRACTOR.”** All questions must be submitted in writing. **IN ORDER TO PREVENT AN UNFAIR ADVANTAGE TO ANY RESPONDENT, VERBAL QUESTIONS WILL NOT BE ANSWERED.** All questions and answers will be posted on Procurement’s website at the end of the business day on **January 8, 2018**. These guidelines for communication have been established to ensure a fair and equitable evaluation process for all Respondents. Any attempt to bypass the above lines communication may be perceived as establishing an unfair or biased process and will lead to disqualification.

Sincerely,

Brenda Allen, Director
Procurement Services

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PART I: SCOPE OF WORK

1.0 BACKGROUND

On July 1, 2013, Shelby County Schools (“SCS”) merged with Memphis City Schools to become one of the largest school districts in the country. During the 2013-14 school year, SCS educated more than 140,000 students in over 270 locations. This included all public schools (traditional, specialty and charter schools authorized by the District) in Shelby County, located within the corporate limits of the city of Memphis, as well as in the six incorporated towns of Arlington, Bartlett, Collierville, Germantown, Lakeland and Millington.

For the 2014-15 school year, approximately 33 schools joined one of six new municipal school districts in Shelby County reducing the student enrollment to approximately 117,269 students in grades kindergarten through grade 12. For the 2015-16 school year, the District projects an enrollment of 109,192 students, which makes Shelby County School District the largest public school district in Tennessee and the 22nd largest public school district in the nation. The District is comprised of 225 schools, which includes traditional schools, charter schools, career and technology centers, special education centers and alternative schools. For the 2016-2017 school year, the District projected an enrollment of 111,500 students. At that time, the District was comprised of 207 schools, which included traditional schools, career and technology centers, special education centers and alternative schools.

Services rendered by this RFP will be managed and utilized by the Department of Network Cabling and Electronics of the Division of Facilities Planning and Management along with the Information Technology Department of SCBE. The Network Cabling and Electronics Department (NCE) provides engineering, project management, and design services for over 150 Shelby County Schools and operating facilities throughout the greater Memphis and Mid-South Area.

The SCBE cabling network systems environment is defined by the following:

- There are approximately 400 (MDF/IDF) telecommunication equipment closets throughout the district. Most locations have a 24-strand fiber optic cable between each closet with over 10,000 subsequent fiber connections. The fiber optical cabling of these telecommunication closets are in need of upgrading.
- The District houses approximately over 6,000 classrooms and over 138 libraries.
- Each classroom has approximately 6 network cable installations and each library has 10 network cable installations; with over 35,000 supervised network installations and connections.
- There are over 7,500 network cable installations used for telephone and/or fax services. At frequent times, schools and various departments submit requests that need attention from sources other than those on staff at SCBE.
- Through the years, the District has averaged over 100 wiring and cabling installation projects per year. In addition, a number of other major and special projects are requested which can be supported by a low-voltage cabling vendor.
- The SCBE employee, school, and customer-based work requests can total over 200 for network Ethernet computer, telephone, fax and or fiber optic drop repair requests each year, including requests concerning maintenance and installations for all types of low-

voltage cabling and electrical wiring for electronic and electrical equipment which also can be supported by a low-voltage cabling vendor.

- To utilize E-rate funding to successfully complete many of the projects aforementioned, a cabling contractor/Cabling Service Provider must be submitted to SLD.

2.0 SCOPE OF SERVICES

The Shelby County Board of Education (SCBE) is requesting bids for the installation of network, fiber optic cabling and associated electrical wiring and maintenance repairs for general and E-rate services in accordance with School and Libraries Division (SLD) of the Universal Service Administrative Company (USAC). SCBE reserves the right to award a contract to one or multiple suppliers based on SCBE policy and USAC regulations and requirements.

3.0 NON-EXCLUSIVE

The intent of this contract is to provide SCBE with an expedited means of procuring supplies and/or services at the lowest cost. This contract is for the convenience of SCBE and is considered to be a "Non-Exclusive" use contract. SCBE does not guarantee any usage. SCBE will not be held to purchase any particular Brand, in any groups, prices or discount ranges, but reserves the right to purchase any item/items listed in the price schedule submitted.

PART II: GENERAL TERMS AND CONDITIONS

1.0 STATEMENT OF CONFIDENTIALITY

It is understood and agreed that all information pertinent to this solicitation may contain trade secrets, which are confidential and proprietary. The selected vendor agrees not to disclose or knowingly use any confidential or proprietary information of SCBE and/or third party participant.

2.0 TERM OF AGREEMENT

The anticipated term of this contract shall be for One (1) years.

The bidder warrants that prices for the proposal under this RFP are not higher than prices currently extended to any other governmental agency for the same product or service.

Upon satisfactory service and by mutual agreement SCBE reserves the right to renew the contract. The term of renewal shall not exceed Two (2) additional one (1) year periods.

- A. SCBE expects all vendors to provide year over year cost reductions recommendations.
- B. Price decreases are acceptable at any time, need not be verifiable, and are required should the contractor/producer/processor/manufacture experience a decrease in costs associated with the execution of the contract.

- C. Price adjustments from the contractor/producer/processor/manufacture for any/all items may be considered at renewal. The request is subject to approval by the Contracting Officer. The request must be submitted in writing at least ninety (90) days prior to the renewal term and shall be accompanied by supporting documentation.
- D. Should the awarded vendor, at any time during the life of the contract, sell materials of similar quality to another customer, or advertise special discounts or sales, at a price below those quoted within the contract, the lowest discounted prices shall be offered to Shelby County Schools.

3.0 PRE-PROPOSAL MEETING (Not Required)

4.0 QUESTIONS AND INQUIRIES

No interpretation of the meaning of the specifications or other documents will be made to any Supplier orally. Questions shall be submitted in writing to the Point of Contact (see Part II, § 5.0). To be given consideration, the questions must be received **NO LATER THAN 01/04/2018 @ 2:00 p.m., CST.**

Questions that are deemed to be substantive in nature will be responded to in the form of an addendum and posted on SCBE website www.scsk12.org/procurement/bids and News Paper. Please do not submit question in PDF format.

Proposals must be sealed in a container marked on the lower left-hand corner with the name and address of the Bidder. SCBE will date stamp the container with the submission date and the submission time. In addition, the sealed container in which the Proposal is submitted should be labeled "**NETWORK CABLING (CONTRACTOR)**". **FAXED RESPONSES WILL NOT BE ACCEPTED.** Further instructions for submitting Proposals may be obtained from:

DEPARTMENT OF PROCUREMENT SERVICES
SHELBY COUNTY BOARD OF EDUCATION
160 SOUTH HOLLYWOOD STREET, ROOM 126
MEMPHIS, TENNESSEE 38112

All completed Proposals and accessory documents should be mailed or delivered to:

Wanda Albright, Buyer
DEPARTMENT OF PROCUREMENT SERVICES
SHELBY COUNTY BOARD OF EDUCATION
160 SOUTH HOLLYWOOD STREET, ROOM 126
MEMPHIS, TENNESSEE 38112

PROPOSAL SOLICITATION SCHEDULE

December 18, 2017	Release of RFP
December 18, 2017	Advertisement of RFP
January 4, 2018 @ 12:30 p.m. cst	Deadline for submitting question
January 8, 2018 by COB	Posting of Response to Questions (Addendum)
January 24, 2018 @ 2:00 pm cst	Proposal Due Date and Time

5.0 CONTRACT FACILITATOR/SCBE SUPERVISION

The Contractor's performance will be under the technical direction of the Buyer/Requesting Department/Project Manager who will be responsible for ensuring contractor's compliance with the requirements of this contract to include managing the daily activities of the contract, providing technical guidance to the contract, and overall project scheduling and coordination. The contractor shall be accountable to the end users on all matters relating to the scope of work.

6.0 CONTRACT TYPE

The contract resulting from this solicitation will be a (_____-)price contract/requirements contract. (Determine with owner)

7.0 PAYMENT TERMS

The Contractor shall submit an invoice detailing the services provided and the actual costs incurred. Payment shall be in accordance with line item price on the Purchase Order and made within 30 days after the date on the invoice.

SCBE reserves the right to reduce or withhold contract payment in the event the Contractor does not provide the Department with all required deliverables within the timeframe specified in the contract or in the event that the Contractor otherwise materially breaches the terms and conditions of the contract.

8.0 RFP REVISIONS

Should it become necessary to revise any part of this RFP, addenda will be posted on SCBE's Procurement Office website @ <http://www.scsk12.org/procurement/bids>. All addenda, amendments or changes issued shall be deemed received by offeror provided they are posted to SCBE Procurement Office website. Failure of any offeror to receive or acknowledge receipt of such addenda or interpretation shall not relieve any offeror from any obligations under this RFP as amended by all addenda. All addenda so issued shall become part of the award.

9.0 SUBMISSION DEADLINE

In order to be eligible for consideration, proposals must be received at Procurement Office no later than **January 24, 2018 @ 2:00 P.M. cst, Room 126**. Vendors mailing proposals shall

allow sufficient carrier delivery time to ensure timely receipt of their proposal Procurement Office after the submission deadline, no matter what the reason, will be returned unopened. Delivery to SCBE' mailroom, lobby, etc. shall not constitute delivery to the Procurement Office is located at 126 S Hollywood Street, Room 126, Memphis, TN 38112.

10.0 PROPOSAL OPENING

RFP Proposals are not opened publicly, but in the presence of at least two Purchasing Office employees. Once the proposals are opened, the Buyer will prepare a document that summarizes the proposals received. This document will be available for inspection no later than 20 days after opening and prior to Notice of Award letter is issued.

11.0 DURATION OF OFFER

A proposal submitted in response to this solicitation is binding upon the Offeror and is considered irrevocable for a minimum of **120 days** following the closing date for receipt of initial proposals or the closing date for receipt of a best and final offer, if applicable.

12.0 INSURANCE

All offerors shall complete and sign the attached Certificate of Insurance with their technical proposal per the attached insurance requirement form (See Appendix G).

13.0 LIQUIDATED DAMAGES

In the event the Award Bidder(s) fails to deliver the goods or services of the contract in accordance with the specifications, SCBE reserve the right to purchase the goods/services on the open market in sufficient quantities to assure the continued operation of SCBE. All additional expenses incurred by SCBE as a result of such purchases will be deducted from the moneys owed or moneys which may become due.

14.0 CRIMINAL BACKGROUND CHECK/PHOTO IDENTIFICATION BADGE

In accordance with TN Code Ann. 49-5-413, unless explicitly excluded by statute; and pursuant to Shelby County Schools' requirements, Vendors (persons, corporations or other entities) whose employee(s), subcontractor(s), or representative(s) will come in contact or close proximity to SCS students during the course of business, must require their employee(s), subcontractor(s), or representative(s) to supply a fingerprint sample, submit to a criminal history records check to be conducted by the Shelby County Schools, Tennessee Bureau of Investigation, and the Federal Bureau of Investigation, and obtain Shelby County School's identification badge prior to permitting the person to have contact with the children or entering school grounds.

The cost of fingerprinting, conducting the criminal records check, and obtaining a Shelby County School's identification badge will be the sole responsibility of the Vendor for each of the Vendor's employee(s), subcontractor(s), or representative(s). The Shelby County School's identification badge shall be worn at all times by each of the Vendor's employee(s), subcontractor(s), or representative(s) at shirt pocket height while on Shelby County Schools' property. For more information regarding of fingerprinting, conducting the criminal records check, and obtaining a Shelby County School's identification badge, please contact 901-416-4720.

SCS further reserves the right to audit the criminal history background records of any Vendor employee(s), subcontractor(s) or representative(s) having contact with SCS students. Audits may be conducted on a quarterly basis with 48 hours' prior notice. It is the Vendors responsibility to ensure records are current and made available upon request to SCS. Failure to provide SCS access to current criminal history checks upon request could lead to Vendor debarment.

15.0 COMPLIANCE WITH LAWS

Offerors shall comply with all federal, state, and local laws, statutes, ordinances, rules, and regulations applicable to the services to be rendered under this Contract. Offerors violation of any of these laws, statutes, ordinances, rules or regulations constitutes a breach of this Contract and entitles SCBE to terminate this Contract immediately upon delivery of written notice of termination to Offeror.

16.0 LEGAL COMPLIANCE

- A. Contractor shall comply in all respect with Federal, State (including Maryland Motor Vehicle laws) and Local Regulations, including laws regarding eligibility to work in the United States. The provisions of this Contract shall be governed by the laws of Tennessee. Any disputes, legal cases or other controversies shall be pursued in Tennessee Courts consistent with and subject to Tennessee State Law. Additionally, if applicable, all materials, supplies, equipment, or services supplied, as a result of this Contract shall comply with the applicable U.S. and Maryland Occupational Safety and Health Act Standards.
- B. Specifically, contractor shall comply with all applicable laws and regulations relating to the employment of aliens, such failure, shall constitute a material breach of contract. It is a mandatory requirement of this contract that employees of contractor and contractor's subcontractors are screened through the Federal Government's E-Verify system, found at www.dhs.gov/E-Verify . This is a "no fee" service.

17.0 EPA COMPLIANCE

Materials, supplies, equipment, or services shall comply in all respects with the Federal Noise Control Act of 1972, where applicable.

18.0 BONDING

Bidders are required to submit a bid bond in the amount of five percent (5%) as determined by SCBE and specified in the RFP, to ensure the satisfactory completion of the work for which a contract or purchase order is awarded that may exceed \$100K.

The bond must be made in favor of the **SHELBY COUNTY BOARD OF EDUCATION, MEMPHIS, TENNESSEE 38112.**

PERFORMANCE AND LABOR BOND The successful bidder is required to submit a performance and/or labor bond, Cashier's or Certified Check in the amount of one hundred percent (100%) as determined by SCBE and specified in the RFP, of all phases of the contract to ensure the satisfactory completion of the work for which a contract or purchase order is awarded that exceeds 100K.

The bond, cashier or certified check must be made in favor of the **SHELBY COUNTY BOARD OF EDUCATION, MEMPHIS, TENNESSEE 38112.**

19.0 TERMS AND CONDITIONS

Any contract entered into in connection with this solicitation shall be subject to these General Terms and Conditions except as otherwise modified herein.

It shall be the Contractor's sole responsibility to insure they are compliant with all applicable federal, state, and city laws, rules, ordinances, statutes, etc., that may impact this contract. SCBE shall bear no responsibility for monitoring the Contractor's compliance with said legal requirements. If the Contractor fails to maintain legal compliance, SCBE may find said Contractor in default.

In the event of conflict between the General Terms and Conditions and any part or portion of the Special Conditions (Appendix A), these General Conditions shall take precedence.

In the event of conflict between this solicitation any of the General Terms and Conditions proposed by any offeror, or incorporated in any acknowledgement of contract awarded to the successful offeror, then, and in such event, the terms and conditions stated herein shall take precedence unless modified in writing by the Procurement Director.

20.0 STATE OF TENNESSEE CERTIFICATE OF EXISTENCE

Offeror shall submit a State of Tennessee Certificate of Existence or other State of Tennessee issued documentation verifying the bidder is in Good Standing with the Division of Business Services and/or registered to do business in the State of Tennessee.

Certificates of Status may be obtained on line at <http://www.dat.state.tn.us>.

This requirement applies to both Domestic and Foreign (out of state) Bidders. Foreign entities should contact the Division of Business Services, 312 Rosa L. Parks Avenue, Snodgrass Tower, 6th Floor, Nashville, TN 37243 to determine and apply for the appropriate documentation

PART III: PROPOSAL FORMAT

1.0 GENERAL FORMAT – TWO - PART SUBMISSION

- A. Offerors shall submit **in separate sealed envelopes** the following;
- Volume I - Technical Proposal
 - Volume II - Financial proposal

Each envelope shall comprise the following:

1. The Technical proposal shall include One (1) original (so labeled) and ____ **(X)** copies in a sealed envelope clearly labeled "Technical Proposal". An electronic version of the Technical Proposal shall also be submitted with the original. Electronic media must be a CD or USB and shall bear a label on the outside

containing the RFP number and name as well as the name of the Offeror and the words Volume I: Technical Proposal.

2. The Financial proposal shall include One (1) original (so labeled) and ____ **(X)** copies in a sealed envelope clearly labeled "Financial Proposal". An electronic version of the Financial Proposal shall also be submitted with the original. Electronic media must be a CD or USB and shall bear a label on the outside containing the RFP number and name as well as the name of the Offeror and the words Volume II: Financial Proposal.

B. Each envelope and the outside of each package shall, in addition, be labeled with the following:

1. The Offeror's name and business address.
2. The due date/time for receipt of proposals.
3. The Title of the RFP and RFP number

2.0 VOLUME I: TECHNICAL PROPOSAL FORMAT

Each proposal must include a table of contents and all pages in the technical proposal must be numbered, consecutively from beginning to end and separated by tabs as described below:

TAB A. TRANSMITTAL LETTER

Technical proposals are to be accompanied by a brief transmittal letter prepared on the Offeror's letterhead, and signed by an individual who is authorized to commit the Offeror to the services and requirements in the RFP and proposal. This transmittal letter shall include:

1. The name, title, address, telephone number, and electronic mail address of the person authorized to bind the Offeror to the contract, who will receive all official notices concerning this RFP.
2. The Offeror's Federal Tax Identification Number or Social Security Number.
3. A brief statement of the Offeror understands of the work to be done, the commitment to perform the work within the time period, and a statement of why the firm believes it is best qualified to perform the engagement.
4. A statement that the proposal is a firm and irrevocable offer for a period of one-hundred twenty (120) days.
5. Acknowledgement of all Addenda to this RFP

TAB B. TABLE OF CONTENTS

TAB C. EXPERIENCE AND CAPABILITIES

Offeror shall provide information on past and current experience with rendering services similar in size and scope to those in this RFP. This description shall include:

1. Summary of the services offered including the number of years the Offeror provided these services; the number of clients and geographic locations the Offeror currently serves, etc. and has served; and if a past customer, why the Offeror is no longer providing services;
2. Organizational chart of the Offeror showing the major components of the unit(s) that will be performing the requirements of this contract; where the management of this contract will fall within the organization; and what resources will be available to support this contract in primary, secondary and back-up roles.
3. Name all key personnel who will perform work under this contract and include each individual's resume. Include work history, educational background and indicate the proposed role/function of each individual.
4. At least **five (5)** recent references from its customers who are capable of documenting the following: a) the Offeror's ability to manage similar contracts, b) the quality and breadth of services provided by the Offeror under similar contracts (See Appendix C).

TAB D. FISCAL INTEGRITY/FINANCIAL STATEMENTS

1. The Offeror shall include in its proposal, completed audited financial statements including the auditor's notes, for its **last three years**. If the Offeror has not had its financial statements audited by an independent accounting firm, the Offeror must submit such un-audited financial statements as it has. Some acceptable methods include but are not limited to one or more of the following:
 - a. Recently audited (or best available) financial statements
 - b. Dunn and Bradstreet Rating
 - c. Standard and Poor's Rating
 - d. Lines of credit
 - e. Evidence of a successful financial track record
 - f. Evidence of adequate working capital
2. Offeror shall identify any claims during the past five (5) years and provide information on any pending litigation, lawsuits etc. The failure to provide accurate information may be determined to be a material breach of any future agreement or contract with SCBE.

TAB E. TECHNICAL RESPONSE TO RFP SCOPE OF WORK

The Offeror shall address each major requirement of Part I (Scope of Work) including: _____ (separated by tabs if substantial)

TAB F. FORMS

1. Certificate of Status (State of Tennessee Certificate of Existence with the Division of Business Services)
2. Addenda Acknowledgement Form (Appendix B)
3. References (Appendix C)
4. Completed Non-Collusion Certificate (Notarized) (Appendix D)
5. Completed Debarment Affidavit (Notarized) (Appendix E)
6. Completed Anti-Bribery Affidavit (Notarized) (Appendix F)
7. Financial Proposal Form (Appendix G)
8. Bid Bond (Appendix H, If Applicable)

TAB G. TECHNICAL ELECTRONIC MEDIA (technical only)

3.0 VOLUME II: FINANCIAL PROPOSAL

- A. Offerors shall enter all price information on Appendix H, "Financial Proposal Form" and submit it under a separate sealed cover as described in Part III, Section 1.0.
- B. An electronic version of the Financial Proposal shall also be submitted with the original. Electronic media must be a CD or USB and shall bear a label on the outside containing the RFP number and name as well as the name of the Offeror and the words Volume II: Financial Proposal.

Failure to provide any of the requested information or documents in this solicitation may render the bid non-responsive.

SCOPE of SERVICE

1.0 THE SERVICES.

SCBE reserves the right to assign the number and amount of projects to the successful Bidder(s) for installation and maintenance of various types of low-voltage cabling and associated electrical wiring. Service Provider or Bidder chosen from this RFP is not guaranteed any general, Non-E-rate or E-rate projects.

All Bidder(s) to this RFP shall provide proof and/or copies of any and all current licenses pertaining to installations of low-voltage cabling, electrical wiring, product certifications, and insurances with their proposal. All Bidders shall be in compliance with the E-rate program established by the Federal Communication Commission (FCC). All Bidder must provide a "Cabling Service Provider Identification Number" (SPIN) to participate in this RFP or be disqualified.

The services sought by the SCBE will require the Bidder(s) or Cabling Service Provider to have the ability to provide exceptional services and materials necessary for the appropriate installation and maintenance of local and wide area structured network cabling, fiber optical cabling and all types of low-voltage type cabling which will support interconnections of telecommunications, data, intercom and video transmissions between varied building facilities, equipment rooms and cabling systems.

The selected Cabling Service Provider, Bidder must also be able to provide service and materials for electrical wiring for specialized circuits pertaining to isolated grounding, surge protection, and dedicated electrical power for adequate operations of equipment and computers throughout the SCBE district facilities. This service will also include and require the selected Cabling Service Provider to be able to provide adequate maintenance and repair of the specialized systems aforementioned.

B.2 SERVICE DETAILS

B.2.1 Required Services

The services sought by the SCBE will require the bidder(s) or Cabling Service Provider to offer services listed (but not limited to) the description of work and terms of performance below.

B.2.2 Description of Work and Terms of Performance (Overview of Work)

The SCBE maintains point-to-point connectivity via voice, data, and fiber optics for local and wide area networks, at several points throughout the SCBE. These locations include data computer stations, telecommunications, security, video and emergency services public safety installations, such as police and fire stations and intercom systems. The immediate response to any structured cabling system interruption is critical. In addition, many locations present a variety of configuration requirements which will be included in the services expected of the successful Bidder.

Each bidder(s) or Cabling Service Provider submitting a proposal must list and describe their company's ability to meet the all requirements within this specification document. Shelby County Schools estimates that the primary Cabling Service Provider or

vendor selected has the potential of providing an average over 2,000 network cabling installations drops per year.

B.2.3 Contractor Supplied Materials

The Cabling Service Provider shall provide **services and materials necessary for the appropriate installation** of local and wide area structured network cabling, which will support interconnections of telecommunications, data and video transmissions between varied buildings facilities, equipment rooms and cabling systems.

B.2.4 Consultation

The Cabling Service Provider shall provide **consultation and estimates (at no cost)** prior to performing work. The selected Provider will make “no cost” consultation site survey visits to assist with design, engineering and evaluations, resulting in cost estimates before projects are approved by the NCE project managers and budget control managers. The SCBE has the right to accept or reject the estimate for a particular project. **Projects also can be offered to the other Successful Bidder (s) Cabling Service Provider who meets the qualifications set forth in the RFP and are E-rate certified.**

B.2.5 Wiring for Specialized Circuits

Provider shall provide service and materials for electrical wiring for specialized circuits pertaining to isolated grounding, surge protection, and dedicated electrical power for adequate operations of equipment and computers throughout the Shelby County Board of Education (SCBE). Electrical wiring is not E-rate eligible.

B.2.6 Repair and Maintenance of Specialized Circuits

The chosen successful cabling service provider or providers must be able to provide their ability to provide repair and adequate maintenance of the specialized systems aforementioned including but not limited to all structured cabling systems network data and voice systems, fiber optical networks, and telecommunications, video and security cabling systems and electrical.

Voice, video, and security cabling work are not E-rate eligible. Each Bidder shall understand that because E-rate does not fund these type of installations, SCBE will be responsible for the total funding of these types of projects and or requests it offers to the Cabling Service Provider to perform.

B.2.7 Contractor Supplied Material - Product Certification

B.2.7.A

The Cabling Service Provider submitting a proposal to provide cabling services must be certified and provide proof of certification to install "CommScope-Systimax solution, Panduit Full Channel Solution product manufacturing company, or industry Approved Equivalent product.

B.2.7.B Trade Names and Alternatives – Industry Approved Equivalent

Any Cabling Service Provider submitting a proposal using a manufacture cabling product line other than those existing in SCS locations such as Commscope-Systimax, Panduit Full Channel Solution product presented by the Bidder's proposal must provide the following which shall be used by SCBE as evaluation tools in justification of equivalent approved equal.

1. Detail information from the manufacturer showing cable specifications, performance specifications and enhanced features in the cabling product.

2. Proof of equality to existing cabling systems from independent industry association which measures cabling capabilities.
3. If prompted by SCBE, Bidder (s) must perform a Cabling installation performance comparison test which will be evaluated. (300ft.)

C1. Certified to provide information and documentation to prove the “equivalency” of its represented product with CommScope Systimax solution product and Panduit full channel solution product.

C2. Certified in the equivalent full channel product by the manufacturing company it represents.

B.2.8 Proof of Performance

The Cabling Service Provider shall prove the ability to perform work of both current CommScope Systimax Solution or Panduit Full Channel Solution product systems or Equivalent Approved Equal located in the SCBE facilities.

B.2.9 Expertise and Technical Capabilities

BICSI Registered Communications Distribution Designer. The Service provider submitting a proposal shall show proof of having employed one or more full-time BICSI Certified RCDD employees and two or more full-time BICSI Certified Installers within Shelby County and qualified staff for service out of normal business hours who are qualified to provide technical support for equipment and services purchased under the contract. The certified Service Provider must have one, preferably two, RCDD (Registered Communications Distribution Designers) staff full time.

B.2.10 Electrical Installation Consulting - Master Electrician

The Cabling Service Provider submitting a proposal must present proof of having a Master Electrician on staff licensed in the State of Tennessee with the ability to assist with site surveys, consultations, etc. The RCDD and the Master Electrician of the selected Cabling Service Provider shall be required to make site survey visits to assist with design, engineering and evaluations resulting in cost estimates before projects are approved by NCE project managers and budget control managers at no charge to the SCBE.

B.2.11 Cabling and Wiring Standards and Regulations

The Cabling Service Provider shall provide services and materials in compliance with all standards and regulations set forth by any nationally authorized governmental cabling and wiring governing agency such as Building Industry Consulting Services International (BICSI), Electronic Industry Alliance (EIA), Telecommunications Industry Association (TIA), by Underwriters Laboratory (UL). No instructions given in the contract documents shall be construed as an authorization to violate any codes, ordinance, regulation or law.

B.2.12 Electrical and Fire Codes

The Cabling Service Provider shall provide services in compliance with the National Electrical Code (NEC), National Fire Protection Association (NFPA), and all federal, state, and local codes, ordinances, regulations and laws applicable to the work to be done considered as minimum requirements that shall be installed in excess thereof. No instructions given in the contract documents shall be construed as an authorization to violate any codes, ordinance, regulation or law.

B.2.13 Warranty Coverage

The Bidder (s) Cabling Service Provider submitting a proposal must provide a statement that they will warranty all work for 1 (one) year including parts and labor.

Additionally, bidder (s) Cabling Service Provider must provide documentation proving all network cabling projects for the brand of product they are submitting will be guaranteed with a minimum twenty (20) year manufacturer's warranty.

B.2.15 Contractor's Ability to Provide Services (Workforce)

B.2.16 Drug-Free Policy

The Cabling Service Provider shall have, and provide, a current Tennessee Drug-Free Workplace Letter for all personnel performing specific services on a Shelby County Schools cabling or wiring projects.

B.3.1 Experience in Low-Voltage Cabling

The Cabling Service Provider submitting a proposal must provide any documented information proving operation of a cabling business with a minimum of 5 years' experience for installation and maintenance in the field of low-voltage, network, and fiber optic cabling (names, projects, clients' phone numbers, references, articles etc.). The Cabling Service Provider must also include in their proposal any documented information showing proof of network cabling installations concerning E-rate projects.

B.3.3 Financial Stability or Annual Report

The Cabling Service Provider shall provide financial records or audited financials for the **past three (3) years**. The financial stability of the Cabling Service Provider and the Cabling Service Provider's length of time in business will be closely evaluated. If this is a privately held corporation, Equivalent Approved Equal financial statements to the annual report will be accepted.

B.3.4 Size of Workforce or Staff

The Cabling Service Provider submitting a proposal must provide the number of Cabling Service Provider employees: Internationally, nationally, and locally. Information must include the total number of employees in Shelby County; in particular, the number of technical and support staff presently supporting similar services, their certifications, licenses, qualifications, and length of service. The Service provider submitting must also submit the names, order and responsibilities of the staff (i.e.- President, Master Tech, RCDD, Estimator, Project manager etc.).

B.3.5 Full Business Design Description

The Cabling Service Provider submitting a proposal must provide a full description of the business design (business model) of the Bidder (s) or Cabling Service Provider, including the number and locations of facilities, offices of the Bidder (s) services offered, staff descriptive summary of Cabling Service Provider, and specification of the location of the home office of the Bidder (s) or Cabling Service Provider.

PRODUCT AND SERVICE FUNCTIONALITY

B.4.1 Contractor Supplied Material-Product Certification

The Cabling Service Provider submitting a proposal must present proof that they have and will maintain a continual certification in CommScope Systemax Full Channel Solution, Panduit Solution or Equivalent Approved Equal Full Channel Solution Product presented by the Service provider in all aspects of design, installation and testing of the products described herein.

B.4.2 Warranty Coverage

The Cabling Service Provider submitting a proposal must provide documentation guaranteeing a warranty on all work for 1 (one) year, including parts and labor for network cabling work. The Cabling Service provider must present and provide document guaranteeing a 20-year warranty on parts used for the product line the service provider presents.

B.4.3 Business Licenses

Cabling Service Provider s submitting a proposal must provide the name and information of any and all licenses and certifications locally and nationally pertaining to the "services" required in this document such as: BICSI certifications, Electrical Licenses, Low Voltage, State Licenses Business Licenses, BBB memberships, etc. Bidders (s) also must give the names, titles and information concerning persons on staff approved by the authorities for holding various licenses and certifications such as RCDD, Master Electrical License, cable installers, etc.

B.4.4 Permits and Fees

The Successful Bidder (s) will be responsible for obtaining and furnishing any/all permits with local and/or state codes enforcement agencies and the payment of required fees to complete all aspects of any project whether low-voltage cabling or electrical of all work performed. Copies of permits and final inspections approved by the authorities having jurisdiction shall be furnished to the owner's representative at the preconstruction meeting.

B.4.5 Cabling Service Provider Identification Number

The Cabling Service Provider submitting a proposal must provide documented proof that they are in compliance with the E-rate program established by the Federal Communication Commission (FCC). All Bidder (s) or Cabling Service Provider s or Cabling Service Provider s submitting a proposal must provide a "Service Provider Identification Number" (SPIN) which may be obtained from USAC. If you have questions regarding this program, call the Schools and Libraries division (SLD) of the Universal Services Administrative Corporation (USAC) at 1-888-203-8100 or see their website at www.universalservice.org.

B.4.6 Product Installation Satisfaction Capabilities

Each bidder (s) or Cabling Service Provider submitting a proposal must list and describe their company's ability and commitment to meet the following requirements:

B.4.6.A

Provide services and materials necessary for the appropriate installation of network cabling.

B.4.6.B

Provide consultation and estimates on each location (at no cost)

B.4.6.C

Provide Cabling Service Provider service and materials for electrical wiring

B.4.6.D

Provide services and materials in compliance with all standards and regulations set forth by any nationally-advertised, authorized, governmental cabling and wiring governing agency

B.4.6.E

The Cabling Service Provider submitting a proposal must provide detailed description of the company's staffing

B.4.6.F Commitment to holding unit pricing submitted for the full amount of years during contract

B.4.7 Expertise and Technical Capabilities

Bidder (s) shall present documentation proving that it has an employee that is a full-time certified BICSI Registered Communications Distribution Designer RCDD with in Shelby County who is qualified staff for service outside of normal business hours and who is qualified to provide technical support for equipment and services purchased under a contract. SCBE prefers that a Cabling Service Provider

has two employees with this certification; however, only one is mandatory. Bidder (s) shall present documentation proving that it has full-time, certified BICSI Certified Installer employee(s) within Shelby County.

B.4.7.1 Bidder (s) shall present documentation proving that it has two or more full time employees that are certified in CommScope Systimax Solution or Panduit Full Channel Solution **or Equivalent Approved Equal** product for installations and maintenance within Shelby County cabling networks. Also proving these techs will be qualified staff for service outside of normal business hours and who are qualified to provide technical support for equipment and services purchased under a contract.

B.4.8 Electrical Installation Consulting-Master Electrician

The Provider shall have a Master Electrician licensed in the State of Tennessee on staff with the ability to assist with site surveys, consultations, etc. and an adequate number of licensed electricians in order to make electrical installations. The Registered Communications Distribution Designer (RCDD) and the Master Electrician of the selected Cabling Service Provider shall be required to make site survey visits to assist with design, engineering, evaluations, resulting in cost estimates before projects are assigned by NCE Project managers and budget control managers at no charge to SCBE.

B.4.9 Response to Service Requests

The immediate response to any structured cabling system interruption is critical. In addition, many locations present a variety of configuration requirements which will be included in the services expected of the selected Bidder or Cabling Service Provider. Each Bidder or Cabling Service Provider in their proposal must list and describe their company's ability and commitment to meet the following requirements: The Cabling Service Provider shall provide response to any normal service **request from SCBE within 24 hours**. The Cabling Service Provider shall **provide response to any emergency service request from SCBE within (5) five hours**.

B.4.10 Full Service Location

SCBE prefers a Cabling Service Provider to have a number of locations of facilities and offices. However, it is essential that the successful provider of this contract possesses a home office with fully-functional service administrative capabilities.

B.4.11 Services Offered

SCBE prefers a vendor who is capable of supporting a wide range of installation and maintenance services as it pertains to low-voltage cabling such as security, intercom and fire alarm cabling and electrical wiring such as circuit feeds and extensions and installations of panels and transformers. Bidder shall provide a full, detailed description listing these services offered by the company.

B.5 MATERIAL GUARANTEE

The wiring Cabling Service Provider shall guarantee, in writing, within the proposal that all installations including Category Cables and fiber optic cabling and components installed will meet or exceed specifications (including installation) of ANSI/TIA-568-C.1, 568-C.2, 568-C.3.

B.5.A Including updated standards TIA-942-A Telecommunications Infrastructure Standard for Data Center, IEEE 802.3ba (Media Access Control Parameters for 40 Gbps and 100 Gbps Operation), ANSI/BICSI-00-2009,

B.5.B ANSI/TIA-568-C.0 (Generic Telecommunications), ANSI/TIA-568-C.1 (Commercial Building Telecommunications),

B.5.C ANSI/TIA,568-C.2 (Balanced Twisted-Pair Telecommunications Cabling and Components Standard), ANSI/TIA,568-C.3 (Optical Fiber Cabling Components)

B.5.D ANSI/TIA-596-D (Telecommunications Pathways and Spaces)

B.5.E ANSI/TIA-606-B (Administration Standard for Telecommunication Infrastructure)

B.5.F ANSI/TIA-607-C (Generic Telecommunications Bonding and Grounding (Earthing) for Customers Premises)

- B.5.G** ANSI/TIA-862-A (Building Automation Systems Cabling Standard)
- B.5.H** ANSI/TIA-942-A (Telecommunications Infrastructure Standard for Data Centers)
- B.5.I** ANSI/TIA-1005-A (Telecommunications Infrastructure Standard for Industrial Premises)
- B.5.J** ANSI/TIA-1179 (Healthcare Facility Telecommunications Infrastructure Standard) ISO/IEC 11801 Generic Cabling for Customer Premises)
- B.5.K** IEEE 802.3af (Power over Ethernet (PoE) Standard)
- B.5.L** IEEE802.3at (Power over Ethernet (Plus)Standard)
- B.5.M** IEEE802.3an (Physical Layer and Management Parameters for 10Gbps Operation Type 10GBASE-T)
- B.5.N** IEEE802.3ba (Media Access Control Parameters, Physical Layers and Management Parameters for 40 Gbps and 100 Gbps Operation)
- B.5.O** IEEE 802.11 (Wireless Standard)

B.6 CABLING SERVICE Provider

B.6.1 The Cabling Service Provider s shall submit the following documents with the proposal:

B.6.1.A Letter of Approval from the manufacturer indicating completion of pre-qualification requirements.

B.6.1.B Training certificates for design, engineering and installation of the proposed products, for the relevant staff involved in the design and installation of this project.

B.6.2 Guaranteed Pricing

The Cabling Service Provider shall hold unit pricing submitted for the full amount of years during contract. No variations or additional expenses will be allowed during the contract.

B.6.3 Point of Contact

The Cabling Service Provider shall be the sole point of contact with regard to completion of all services provided and contractual matters, including the performance of warranty services and the payment of any and all charges resulting from contract obligations. Upon contract award, the selected Cabling Service Provider will designate an account manager who will serve as the point of contact for the SCBE upon the contract award. Any sub-contractor working in conjunction with a chosen successful service provider will also be responsible for any warranty issues concerning work they have performed or cabling/wiring they have installed.

B.6.4 Response to Service Requests

The immediate response to any structured cabling system interruption is critical. In addition, many locations present a variety of configuration requirements which will be included in the services expected of the selected Bidder or Cabling Service Provider. Each Bidder or Cabling Service Provider must list and describe their company's ability and commitment to meet the following requirements:

B.6.4.A

The Cabling Service Provider shall provide response to any routine service request for support from the SCBE **within 24 hours**.

B.6.4.B

In the case of an emergency service call, the successful Cabling Service Provider must provide verbal response within two (2) hours of the request and provide actual physical service support, that is,

provide a technician on site of the emergency request, within five 5 hours of the emergency request for support.

B.6.5 Network Cabling Services

The Cabling Service Provider shall provide installations, alterations, site surveys, price estimates and maintenance for the appropriate installation of local and wide area structured network cabling, which will support interconnections of Telecommunications, data, voice, fiber optic, video, security and cabling transmissions between all SCBE varied building facilities. Bidder must remember that voice, video and security cabling are not E-rate eligible.

B.6.6 Electrical Wiring Services and Materials

The Cabling Service Provider shall provide service and materials for electrical wiring for specialized circuits pertaining to isolated grounding, surge protection, and dedicated electrical power. Any Bidder to this RFP must show the ability to repair and provide adequate maintenance of all specialized systems mentioned in this RFP. Bidder must remember that electrical wiring is not E-rate eligible.

B.6.7 Network Systems Installation, Maintenance and Repair

Cabling Service Provider must demonstrate the ability to repair and provide adequate installation, maintenance and repair for cabling and wiring of all the specialized systems mentioned within the total contents of this RFP. The Cabling Service Provider is fully responsible for any and all damages resulting from their installations, of new network cabling, electrical wiring, fiber optic cabling, maintenance repairs and E-rate services,

The successful chosen service provider responsible for the damages must re-install, test and ensure activation of all cabling and or electrical wiring that was affected by their installations or maintenance services. The service provider responsible for damages must either replace or provide funding for any equipment that was damaged during their installations or maintenance services. **Failure to adhere to the aforementioned specifications may result in breach of contract. SCS reserves the right to terminate contacts as deemed necessary.**

B.6.8 Individual Itemized Billing

The Cabling Service Provider shall provide individual itemized billing for E-rate services and non- E-rate support services to be performed by full time resource(s) at no additional cost.

B.6.9 Timeliness of Work

The Cabling Service Provider shall provide timely information, data, decisions, approvals, and resolve issues to the SCBE Network Cabling and Wiring Design (NCE) department.

B.6.10 Quality of Work - The Cabling Service Provider must complete all work in a workmanship like manner in accordance with standards and practices, local codes, codes and ordinances, applicable statutes, and in accordance with manufacturer's recommendations, where applicable.

B.6.11 Contracting with Multiple Vendors

The Shelby County Board of Education reserves the right to itemize and award separate contracts for all general non-E-rate network cabling installations, equipment, service, and maintenance. Although SCBE prefers to contract with a single Cabling Service Provider for cabling installations, equipment, service, and maintenance during the term of this contract, SCBE may contract with one or more vendors to install local and wide area network cabling if necessary.

B.6.12.

SCBE also reserves the right to award contracts to multiple service providers or vendors, if necessary, to obtain the desired coverage for non-E-rate work. SCBE also reserves the right to solicit individual bids on certain larger projects. The SCBE will consider multiple bids from the same vendor.

B.6.13 Changes to Work

The Cabling Service Provider must provide any changes to a project's original description to SCBE/NCE in a built drawing showing changes and proper documentation for approval.

B.6.14 Cabling Service Provider- Invoicing and E-rate Compliance

The Cabling Service Provider will only invoice the Shelby County Board of Education for the E-rate percentage that applies to SCBE. The Cabling Service Provider will then invoice USAC directly for their SLD percentage.

B.6.14. A

Provide individual itemized billing for E-rate services and non-E-rate support services, to be performed by full resource(s).

B.6.14. B

Provide full time resource(s) to perform E-rate services and non- E-rate services to be reported and contracted separately.

B.6.14.C

Provide cost per location for E-rate Schools. Provide a format that reflects cost per location for E-rate schools for the SCBE Network Cabling and Electronics.

B.6.14.D

Provide detailed service activity reports per billing period that document E-rate eligible services performance per service location. Provide a format that reflects cost per location for percent schools for Network cabling and wiring.

B.6.14. E

Provide diagnostic, upkeep and configuration change services' eligible E-rate cabling systems.

B.6.14. F

Provide and assist with design, engineering, and project estimates to (NCE) for E-rate projects without charge to the Shelby County Board of Education.

B.7 E-RATE INVOICING REQUIREMENT

Upon the approval of the SCBE E-rate application, Bidder or Cabling Service Provider is required to split all invoices for E-rate eligible services and bill the approved discount level directly to USAC and the remainder to the Shelby County Board of Education. In accordance with their requirements, all non-eligible services will be billed directly to the SCBE. Bidder or Cabling Service Provider must comply with this segregation of billing if E-rate approval is given no later than July 1 - June 30 of subsequent contract years. Bidder or Cabling Service Provider who cannot comply with these requirements should not respond to this solicitation. The Cabling Service Provider is solely responsible for invoicing (SLD) for their portion of E-rate project funding. The Shelby County Board of Education will not be responsible for funding not paid by (SLD) or E-rate Provider concerning E-rate projects.

B.7.1 FCC/SLD Auditability

The E-rate program requires that all records be retained for at least ten years. Bidder hereby agrees to retain all books, records, and other documents relative to this contract for Ten (10) years after final payment, or until audited by SLD and or District, whichever is sooner. District, its authorized agents, and/or auditors reserves the right to perform or have performed an audit of the records of the contractor and therefore shall have full access to and the right to examine any of said materials within a reasonable period of time during said period.

B.7.2 Lowest Corresponding Price

Cabling Service Provider acknowledges and agrees to comply with all FCC guidelines regarding the Lowest Corresponding Prices for services provided.

B.7.3 Joint Ventures

Bidder or Cabling Service Providers are allowed to enter joint ventures for the purposes of responding to this RFP and providing the Services.

B.8 GENERAL CABLING REQUIREMENTS AND INSTALLATION REQUIREMENTS

B.8.1 Cable Pathway

Extension of all data and voice cables shall be within raceway, conduit, cable tray or other designated cable delivery system provided and installed by the Cabling Service Provider where concealed in walls and exposed above ceilings in plenum spaces. All structured cabling installed in the SCBE locations will be **plenum rated** unless otherwise requested.

B.8.2 Hardware

Required hardware includes, but is not limited to, termination blocks, fastening devices, data outlets, voice outlets, connectors and all required accessories to comply with this specification.

B.9 SPECIAL REQUIREMENTS FOR CABLE ROUTING AND INSTALLATION

All communications cabling used throughout this project shall comply with the requirements as outlined in the National Electric Code (NEC) Articles 725, 760, 770, and 800 and the appropriate local codes. All balanced twisted pair cabling shall bear CMP (Plenum Rated), CM/CMR (Riser Rated) and/or appropriate markings for the environment in which they are installed. All fiber optic cabling shall bear OFNP (Plenum Rated), OFNR (Riser Rated) and/or appropriate markings for the environment in which they are installed.

B.9.1 Complete and Timely Installation

The Cabling Service Provider will be solely responsible for complete and timely installation of all proposed cables and connectors. On jobs with 12 or fewer connections required at that location, the Cabling Service Provider must complete the job within three (3) business days of the SCBE request. The Shelby County Board of Education reserves the right to bid out any jobs as separate projects; those jobs must be timed with the Shelby County Board of Education notification and agreement.

B.9.2 Concealed/Exposed

All cable shall be concealed in the drop ceiling and walls when possible. Exposed cable that is not above drop ceiling shall be installed in EMT conduit raceway unless approved by a SCBE IT representative. The Service Provider **shall not share pathways** or J hooks with other Crafts. Therefore, the Cabling Service Provider shall provide a pathway/raceway including sleeves for individual projects.

B.9.3 Sites Left Clean

The Cabling Service Provider will complete the installation by leaving the site "broom clean." On outside plant work, the Cabling Service Provider will make all necessary repairs to any uprooted asphalt or grass where required.

B.9.4 Cable Testing

Before the work is approved for payment, the Cabling Service Provider will test all of the cables. All Category 5e and Category 6 cables must be tested with a Fluke DTX 1800 Cable Analyzer or Equivalent Approved Equal. The cables must pass all Category 5e and Category 6 parameters as outlined in the ANSI/TIA 568-C.1 Standard. The Cabling Service Provider must provide test results in both hard copy and soft copy form downloaded from tester to PDF file. On jobs consisting of greater than 12 cable runs or projects involving new construction, the Cabling Service Provider must also provide two (2) copies of as-built drawings of each floor's layout to the Information Systems Project Manager or his or her designee. Before the work is approved for payment, the Cabling Service Provider will test all of the cables. All Category 5e and Category 6 cables must be tested with a Fluke DTX 1800 Cable Analyzer or Equivalent Approved Equal. The cables must pass all Category 5e and Category 6 parameters as outlined in.

B.9.5 Fiber Optic Testing

Upon completion of each fiber optic installation, the Cabling Service Provider must test all multimode fiber at both the 850 nm and 1300 nm wavelengths and all single-mode fiber at 1310 nm and 1550 nm wavelengths with a power meter. All test results must be submitted in both hard and soft copy form along with two (2) copies of as-built drawings of the fiber optic cabling layout. Attenuation should be less than 2dB per strand unless the lengths of fiber will allow a greater loss according to the ANSI/EIA/TIA 568-C.3, standards. Any fiber loss greater than 2dB must be approved by the SCBE or repaired.

B.9.6 Cable Labeling

Upon completion of each network installation, the Cabling Service Provider will label cables on both ends with a machine-generated label using a corresponding numbering scheme (both ends must have the same number). All labeling must conform to **DATA/VOICE NOMENCLATURE as seen in this document and approved by SCBE NCE department.**

B.9.7 Cover or Trim Mold, Core Boring, Etc.

Some jobs may require a cover or trim mold, and core boring such as firewalls.

B.9.8 Additions, Moves, and Changes

Additions, moves, and changes may be ordered as needed for the duration of this agreement, via the Cabling Service Provider contact person and referenced with a work order number or Request for Capital Expenditure (RCE) number. The Cabling Service Provider is expected to coordinate changes with current voice and data Providers and any other SCBE parties, as needed.

B.9.9 Wireless Access Point Installation

Some Category 6 cable runs will be part of a wireless network installation. The Cabling Service Provider will be asked to provide the labor costs to physically mount SCBE-provided wireless access points in addition to installing the cable for their connectivity.

B.9.10 Fire Stopping

Sealing of openings between floors, through rated fire and smoke walls, existing or created by the Cabling Service Provider for cable pass through shall be the responsibility of the contractor. Sealing material and application of this material shall be accomplished in such a manner, which is acceptable to the local fire and building authorities having jurisdiction over this work. Creation of such openings as are necessary for cable passage between locations as shown on the drawings shall be the responsibility of the contractor's work. Any openings created by or for the Cabling Service Provider and left unused shall also be sealed as part of this work.

B.9.11 Release of Liens

Before payment is made for each location where cable is installed, the Cabling Service Provider shall deliver to the Information Systems Project Manager releases of all liens and of rights to claim any lien, in a form satisfactory to the Shelby County Board of Education, from all material suppliers and Sub-Cabling Service Provider furnishing labor and materials under this agreement and an affidavit, in a form acceptable to the Information Systems Project Manager, to the effect that all labor used under this agreement has been paid.

B.10 DATA/VOICE CABLE GUIDELINES

B.10.1 All installations shall comply with all items listed in this document. All exceptions to this document will be included in an RFP specific to each job being bid on.

B.10.2 All installations should be consistent with the philosophy of developing a structured cabling system for the SCBE. Detail guidelines of installations set forth by the Network Cabling and Electronics Department of the SCBE (Specifications available for projects).

B.10.3 All installations should meet or exceed all local, regional, state and national health, building, and electrical codes, regulations and laws.

B.10.4 All installations should be clearly labeled at the jack and patch panel ends consistent with the SCBE current numbering scheme.

B.10.5 All cables should be parallel and/or perpendicular to normal building structure.

B.10.6 All overhead cable runs should make use of appropriate cable hangers. They must be fastened to the building structure. Installation of supports such as J hooks shall be in accordance with Standards 3ft and then 4 ft. apart. No supports can be used on ceiling grid wires or ceiling straps.

B.10.7 Absolutely no nylon “zip” ties or similar shall be used on any cables for cable support. Velcro type material must be installed for appearance and workmanship only at minimum of 10ft. apart.

B.10.8 Detailed documentation of each completed job must state the location of each cable run/drop and all applicable test/certification results for that run. Cable certification results should be supplied to the SCBE electronically, preferably on CD-ROM – hard copies are optional.

B.11 DATA / VOICE JACKS (NO SUBSTITUTION)

All data and voice jacks shall be RJ45 style using the four pair T568A wiring scheme.

B.12 FACEPLATES (NO SUBSTITUTION)

All faceplate connections shall use the 110 style Giga Speed, eight position data jacks.

B.13 DUST COVER / BLANKS (NO SUBSTITUTION)

Furnish and install dust covers/blanks in all data/voice jacks in offices and classrooms where needed.

B.14 PATCH CABLES (NO SUBSTITUTION)

Cabling Service Provider is responsible for furnishing all Cat.6 or fiber optic patch cables associated with the Data/Voice portion of each project associated with this RFP.

B.15 WALL PENETRATION

B.15.1 All penetrations of hallways and fire-rated walls shall be fireproofed with a UL-approved, fire-stop material

B.15.2 Cement or fireproofing that sets up hard shall be used around the outside of the conduit at all wall penetration.

B.15.3 Moldable fireproofing shall be used inside of the conduit nipples.

B.16 DATA/VOICE NOMENCLATURE

B.16.1 Identify all items of equipment installed on the project. Each **faceplate cover**, all **cable ends** and **patch panels** shall be labeled with the cable type, room number, data / telephone cable number, and wire distribution rack, using a Kroy Dura -Type 200 label marker or Equivalent Approved Equal. Patch panels shall be marked to match the data / telephone cable number.

B.16.2 **Properly identify all wire distribution racks with black plastic plates with 1/4" white engraved lettering on the face of each, permanently attached with two tapped screws. Example: MDF or IDF#1.**

B.16.3. A label with the term Cat.6 shall be applied in the center of the Gigaspeed patch panel. Each port in the six port modules shall be labeled to match the data / telephone cable numbers.

B.16.4.A Example of room labeling:

B.16.4.A.1 Room #301-#1-MDF

B.16.4.A.2 Room #301-#2-MDF

B.16.4.B Example of how to follow existing cable numbering sequences already established in rooms.

B.16.4.B.1 Room #301-#6-MDF (This is the last existing cable for room #301 in the patch panel.)

B.16.4.B.2 Room #301-#7-MDF (This is the first new cable for room #301 added to the patch panel.)

B.16.4.C Example of how to label administration areas that are not assigned room numbers, but use the abbreviation for “office”.

B.16.4.C.1 Off. -#4-IDF#3

B.16.4.C2 Off. -#5-IDF#3

B.16.4.D Example of how to follow existing cable numbering sequences already established in administration areas.

B.16.4.D.1 Off. -#6-IDF#3 (This is the last existing cable in office area in the patch panel.)

B.16.4.D.2 Off. -#7-IDF#3 (This is the first new cable added to office area in the patch panel.)

B.17 COMPUTER CABLING

Schedule all installation of computer cabling to interfere as little as possible with school's normal operation. Existing computers will be moved by school personnel and shall not be moved by Cabling Service Provider.

B.18 CABLE GRADES

All cable installed on interior of the building not enclosed by a metal conduit pathway shall be plenum rated, unless approved by a SCBE IT representative.

B.19 CABLE SUPPORT

Existing or new (“J” hook) pathways used in this project must support the standards of Cat.6 cabling. If new pathways are needed, use “J” hooks only.

B.19.1

Support the new “J” hooks from the building structure. Alternate three foot and four foot “J” hook spacing throughout new pathway installation. Do not use equal spacing of “J” hooks, or exceed the four-foot spacing on new pathway installations. The use of plastic anchors to support “J” hooks, straps or any type of support is strictly prohibited. No ceiling grid J-hooks will be allowed.

B.20 CABLE TERMINATION

Insulation Displacement Contact (IDC) shall be the method of terminating the Cat.6 data jacks.

B.21 CABLE BEND RADII

All cable shall comply with the TIA specifications TSB40; cable bend radii shall not be less than eight times the cable diameter. This requirement translates to a minimum bend of 2 inches.

B.22 CABLE TESTING

The Cabling Service Provider shall test all cables **using the latest versions of Fluke meters** including but limited to, and then submit performance verification in **soft copy format to the SCBE Network Cabling and Electronics Department Facilities Maintenance Division. All UTP cables shall meet performance standards for Cat.6 cable and the SCBE NCE and IT standards of more than 2 db headroom on cables. This includes CCTP CAT.6 cable. All cables shall pass equivalency standards of Commscope Systimax or Panduit full channel solutions comparing to the highest standards set forth by BICSI. The successful Cabling Service Provider shall present documentation of these standards no matter what product is approved to be installed.**

B.23 CABLE INSTALLER / TESTER CERTIFICATION

Cabling Service Provider submitting a proposal must submit to the SCBE proof that each installer and person testing cables has successfully completed a training class recognized by Building Industry Consulting Service International, (BICSI), for installing and testing Unshielded Twisted Pair (UTP) Cat.6 cable.

B.24 FIBER OPTIC CABLE REQUIREMENTS

B.24.1 Fiber optic cable shall be installed in rigid conduit outside of building, or messenger supported when aerial pathways are needed.

B.24.2 Fiber optic cable run above the drop ceiling shall be enclosed in inner duct or armored fiber and supported up and off the ceiling tiles supported from the building structure and marked with labels stating, "**FIBER OPTIC CABLE**" every 20 feet.

B.24.3 Exposed fiber optic cable that is not above the drop ceiling shall be installed in EMT raceway unless approved by a SCBE IT representative.

B.24.4 Fiber optic cable installed between wire distributions racks shall be FDDI certified 50/125-micron multimode cable. All terminations shall be fusion type.

B.24.5 Fiber optic cable installed to portable buildings shall be six-strand indoor/outdoor fiber optic FDDI certified 50/125-micron multimode cable. Cabling Service Provider shall make up all six strands of fiber.

B.24.6 Fiber optic cable installed to portable buildings shall be installed in a manner to prevent loss of connectivity if any portable is removed from the site.

B.24.7 The SCBE does not require 24-strand fiber optic cable to be installed in inner duct, but all other fiber optic cable specifications apply. The Shelby County Board of Education does require all fiber optic cable to be installed in inner duct.

B.24.8 All fiber optic connectors shall be of the "ST or LC" type fusion type terminations only, unless otherwise specified by NCE Department. Cabling Service Provider must install factory polished connectors with pigtail fusion splices to the backbone or horizontal fiber stands. The SCBE does not allow the use of any field terminations methods (Anaerobic, crimp style or EZ crimp). Test results for all fusion splices must accompany all completed jobs before invoicing and/or payment will be processed. With factory unless otherwise specified by the project manager.

B.24.8. A The Cabling Service Provider shall guarantee not more than a 2-db loss on any strand of any complete end to end installation. All terminations shall be fusion type.

B.24.8.B Rack mounted fiber optic patch panels shall be used in all wire closets in the top area of the rack space.

B.25 GROUNDING REQUIREMENTS

All grounding and bonding shall meet the National Electrical Code (NEC) as well as local codes, which specify additional grounding and/or bonding requirements and those specifications.

B.25.1 Bonding and Grounding

Communication bonding and grounding shall be in accordance with the NEC and NFPA. Horizontal cables shall be grounded in compliance with ANSI/NFPA 70 and local requirements and practices. Horizontal equipment includes cross connect frames, patch panels and racks, active telecommunication equipment and test apparatus and equipment. When required by local code, provide a Telecommunications Bonding Backbone utilizing a #4-AWG or larger bonding conductor that provides direct bonding between equipment rooms and telecommunications rooms. This is part of the grounding and bonding infrastructure (part of the telecommunications pathways and spaces in the building structure) and is independent of equipment or cabling. All newly installed ground rods shall be grounded to the which is the Main Switchgear initial grounding system which is the original ground point.

- B.25.1. A** Equipment grounding conductors, identified and sized in accordance with the 2005 NEC, 2005 NEC shall be installed in each service, feeder, and branch circuit conduit.
- B.25.1. B** Insulating type, grounding bushings shall be installed at the origin and termination of all service and feeder conduits. The grounding conductor, pulled in each conduit shall be bonded to this grounding bushing and to the grounding terminal in the cabinet, switchboard or panelboard.
- B.25.1.C** All equipment grounding conductors shall be terminated under approved grounding fittings or screws. All terminations shall be made to bright metal surfaces with tapped bolts, screws, etc. or be bolted through the surface with cadmium-plated bolts, star-washers and nuts.
- B.25.1. D** All equipment grounding conductors shall be effectively bonded to grounding electrodes, ground buses, and equipment enclosures.
- B.25.1. E** All separately derived systems shall be grounded in accordance with the 2009 NEC Article 250. All separately derived systems shall be grounded in accordance with the 2009 NEC Article 250. All Work of the selected Cabling Service Provider shall be in accordance with the 2009 NEC code and standards.
- B.25.1. F** Separately derived systems neutral shall be grounded to one 5/8" diameter x 8' copper ground rod. The grounding electrode conductors shall be connected to the grounding electrode with a Blackburn JAB12 ground clamp. UL approved for direct burial, or Equivalent Approved Equal.
- B.25.1. G** PVC conduit shall be used to enclose all service grounding conductors as required in 2009 NEC Article 250. Exposed PVC conduit used in this application shall be supported securely within 18" of each cabinet, transformer, fitting, etc. and each 3 linear feet. PVC conduit shall be used to enclose all service grounding conductors as required in 2009 NEC Article 250. Exposed PVC conduit used in this application shall be supported securely within 18" of each cabinet, transformer, fitting, etc. and each 3 linear feet.
- B.25.1.H** All extended and new branch circuit conduits shall have an equipment ground wire pulled in it. All equipment ground wires shall be pigtailed and bonded at each junction and outlet box with a #10/32 grounding screw or approved grounding clip.
- B.25.1. I** All new branch circuits shall have an isolated ground wire per neutral wire. The isolated ground wire size must be equivalent to current carrying conductor size and be green with an orange band. This is addition to the mechanical/equipment ground.
- B.25.1. J** Cabling Service Provider shall ensure that each existing and all new wiring closets and new panels have a #4 stranded copper ground wire that originates from the main central grounding point, and terminates to the isolated ground bar. All new, individually installed #4 isolated ground wires shall be installed in PVC conduit where exposed or within bar joist, or J-Hooks above drop ceiling. A telecommunications grounding bus bar shall be used at all termination points.
- B.25.1. K** Grounding terminal strips shall be provided in all panelboards, where circuits are derived.

B.26 RACEWAYS AND FITTINGS

B.26.1 Electrical Metallic Tubing (EMT)

- B.26.** EMT shall be used only in dry locations within the confines of the building's walls. Dry location shall be as defined in the 2005 NEC.

B.26.1. B EMT shall be used for feeders and branch circuits in the above-approved areas.

B.26.1.C EMT, 9' A.F.F., shall be supported securely each 10 linear feet and within 18" of each outlet box, junction box, cabinet and fitting.

B.26.1. D Exposed 1" EMT and smaller, below 9' A.F.F., shall be supported securely with two hole straps each 5 linear feet and within 18" of each outlet box, junction box, cabinet and fitting.

B.26.1. E Minimum size of EMT shall be ½" for electrical ¾ inch for Data cabling.

B.26.1. F Fittings shall be steel, setscrew type. No malleable and/or die cast types all allowed.

B.26.1. G Cabling Service Provider must install include up to 20' of ¾" EMT and box for stub-ups. This includes all steel type **fittings and 3 – 2 hole straps per stub-up. (Minimum strap every 3 ft.)**.

B.26.2 Galvanized Rigid Conduit (GRC)

B.26.2.A GRC shall be used in all runs on the exterior of the building.

B.26.2.B Compression type, rigid fittings, in place of "Erickson" type may be used on the exterior of the building. Set screw type, rigid fittings may not be used in any situation.

B.26.2.C Exposed 1" and smaller GRC, on exterior walls below 9' A.F.F., shall be supported securely with two hole straps each 5 linear feet and within 18" of each outlet box, junction box, cabinet and fitting.

B.26.2.D Minimum size of GRC shall be ½"

B.26.3 Flexible Metal Conduit

Liquid tight flexible metal conduit shall be used in the following locations:

B.26.3.A Flexible raceways exposed to intermittent or continuous moisture.

B.26.3.B The termination of line and load feeders to all transformers.

B.26.3.C Use of Flexible Nonmetallic Conduit is not allowed.

B.26.3.D Metal-Clad cable, type MC is not allowed.

B.27 CONDUCTOR REQUIREMENTS

B.27.1 Provide 98% conductivity copper conductors with 600-volt insulation. No aluminum conductors will be allowed. #12 AWG shall be the minimum size conductor. #10 AWG and larger shall be stranded. All insulation shall be THHN or THWN as required by the NEC due to the location.

B.27.2 All conductors shall be UL approved and made in the United States of America.

B.27.3 All power and lighting conductors shall be color coded as indicated below:

120/208 Volt 277/480 Volt
Phase A Black Brown
Phase B Red Orange
Phase C Blue Yellow
Neutral White Gray

**Ground Green
ISO-Ground Green/Orange Stripe Green/Orange Stripe
Use factory color-coded conductors where commercially available.
If not available, use black conductors and band with colored tape.**

B.27.4 Use pulling compound to pull all feeders.

B.27.5 Install pull boxes in feeders over 200' in length. Install pull boxes in branch circuits over 100' in length. A loop of slack shall be left in each pull box to permit at least one spliced joint to be remade in case of a fault. Install feeder conductors, under 200' in length, in continuous spans from origin to termination without splices where possible.

B.27.6 Where splices or taps are necessary or required, they shall be made in outlet, pull or junction boxes. Install #10 AWG in lieu of #12 AWG for any branch circuit in excess of 100' to prevent excessive voltage drop. No neutral conductors shall be de-rated.

B.28 JUNCTION AND PULL BOXES

B.28.1 Pull Boxes

B.28.1.A All pull boxes shall be sized in accordance with the 2005 NEC.

B.28.1.B All pull boxes shall have solid tops, sides and bottoms. No factory knockouts, single or concentric, shall be allowed.

B.28.2 Outlet and Junction Boxes

B.28.2.A Outlet and junction boxes shall be a minimum 4" square x 2 1/8" deep type. Unless otherwise specified.

B.28.3 Pull and Junction Box Support

B.28.3.A All pull and junction boxes shall be mounted to the building structure or surface as in accordance with 2005 NEC. No box shall be supported by the conduits entering or leaving it.

B.28.3.B Locate each pull and junction box where it will be accessible in the finished project.

B.29 UNISTRUT CHANNEL

Unistrut channel shall be Unistrut P1000, 1-5/8" x 1-5/8", 12 gauge, painted channel or Equivalent Approved Equal.

B.30 TRANSFORMER

B.30.1 The Cabling Service Provider shall furnish and install, as identified on the drawings, a dry-type transformer type (NL) or (NLP) as (K-rated) manufactured by the Square D Company or Equivalent Approved Equal.

B.30.2 The transformer coils shall be of the continuous wound construction and shall be impregnated with no hygroscopic, thermosetting varnish. Transformers 15 KVA and larger shall have a minimum of 6-2.5 full capacity primary taps for 480 V primaries. Voltages and taps shall be designated on the transformer schedule.

B.30.3 Transformers are to be UL listed and labeled for (K-4) or (K-13), defined as the sum of fundamental and harmonic $1(\text{pu})^2\text{h}^2$ per UL 1561. Transformers evaluated by the ULK-Factor evaluation shall be listed for (115°C) or (80°C) average temperature rise only. Manufacturer's rating K-Factors with temperature rise of 150°C rise shall not be acceptable.

- B.30.4** Factor rated transformers shall have an impedance range of 3% to 5%, and shall have a minimum reactance of 2% in order to prevent excessive neutral current when supplying loads with large amounts of third harmonic.
- B.30.5** Three phase transformer secondary neutral terminals shall be sized for 200% of the secondary phase current.
- B.30.6** The maximum temperature of the top of the enclosure shall not exceed 50°C rise above a 40°C ambient.
- B.30.7** Transformers of 500KVA or smaller shall be listed by Underwriters Laboratory.
- B.30.8** The Cabling Service Provider shall provide additional external vibration dampening and isolating means for mounting all transformers to floors, walls and building strut.
- B.30.9** All newly installed transformers shall have copper windings
- B.30.10** When transformer is mounted in from ceilings it must be approved by SCBE first before installation.

B.31 **PANELBOARDS**

- B.31.1** Provide circuit breaker board type panelboards.
- B.31.2** Panelboards shall be Square "D".
- B.31.3** Provide panelboards of circuit breaker, dead-front safety type, UL labeled and meeting all applicable requirements of the National Electrical Manufacturers Association.
- B.31.4** Provide panelboards with 75°C or higher rated (both main lugs and branch circuit lugs) suitable and UL approved for both aluminum and copper conductors.
- B.31.5** Provide electrically isolated factory installed neutral bus.
 - B.31.5.A** Provide separate, ground bus complete with lugs or connections on bar. Where noted provide an additional electrically isolated ground bar.
 - B.31.5.B** Provide panelboards with distributed phase busing for: 120/208 volts 277/480 volts as noted. All bus to be tin-plated copper.
 - B.31.5.C** Provide panel doors equipped with chrome-plated locks and catches, all keyed alike. Provide two keys for each lock. Provide fronts with adjustable indicating trim clamps. Provide a separate pad-lockable hasp and install all panels using 1/8 "zinc plated steel rivets.
 - B.31.5.D** Provide bolt-on, thermal magnetic circuit breakers, inverse time delay and instantaneous circuit protection. Wiring connections shall be rated at 75°C or higher. Circuit breakers shall be calibrated to carry 100% rated current in a 40°C ambient and shall be self-derating in higher temperature environments to properly protect the conductor. Breakers to be quick-make, quick-break type with trip indication shown by handle position other than ON or OFF and with a common trip on all multi-pole breakers.
 - B.31.5.E** The interrupting rate of the circuit breakers shall be at least equal to the available short circuit current at the line terminals of the circuit breaker and shall conform to UL listed integrated short circuit current rating specified for the panelboards and switchboards. Branch circuit breakers shall be 10,000 AIC rated for 240 VAC and lower potential, 14,000 AIC for 277 to 480 VAC potentials unless a higher AIC is noted otherwise. Series rating in accordance with UL is allowed to meet this requirement.

B.31.5.F Refer to drawings for numbers of branch circuits, their ratings, number of poles, arrangements, etc. Panel schedules indicate spaces where bus provisions are to be provided.

B.32 RECEPTACLES

B.32.1 General Purpose Outlets

B.32.1.A Hubbell or P&S, duplex, straight blade, specification grade, and side wired Ivory #5352I type or equal.

B.32.1.B Computer Outlets (Isolated Ground)

Hubbell or P&S, duplex, straight blade, specification grade, and side wired orange isolated ground #G5262 type or equal.

B.32.1.C Computer Outlets (Isolated Ground-Surge Suppression)

Hubbell or P&S, duplex, straight blade, specification grade, side wired, orange isolated ground, surge suppression #IG5262OS type or equal.

B.32.1.D Computer Outlets (Non-Isolated Ground-Surge Suppression)

Hubbell or P&S, duplex, straight blade, specification grade, side wired, blue, surge suppression #5262S type or equal.

B.32.1.E Uninterruptable Power Supply Outlets

Hubbell or P&S, single, locking type, specification grade, side wired, brown NEMA L5-30R type or equal.

B.33 SUPPORTS

All new conduit and cable systems shall be supported from or attached to the building's structure. The Shelby County Schools does not recognize, nor will accept the suspended ceiling or its support wires as part of the building's structure.

B.34 TELE-POWER POLE AND ACCESSORIES

B.34.1 Tele-power poles and accessories shall be:

B.34.1.A Wiremold – 30TP-4V

B.34.1.B Wiremold –30TP-4V device bracket (Duplex Cover)

B.34.1.C Wiremold – 30TP-L device bracket (TVSS Duplex Cover)

B.34.1.D CommScope Systemax Solution - M106FR2 Modular mounting frame.

B.35 SURFACE RACEWAY AND ACCESSORIES

B.35.1 Panduit Full Channel Solution Surface raceway and accessories shall be:

B.35.1.A Panway TG-70

B.35.1.B Panduit Full Channel Solution device mounting bracket TG70DB-X

B.35.1.C Panduit Full Channel Solution entrance end fitting TG70EEIW

B.35.1.D CommScope Systemax Solution - M106FR4 Modular mounting frame.

B.35.2 In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Cabling Service Provider shall bundle, in bundles of 50 or less, horizontal cabling with cable ties snug, but not deforming the cable geometry. Cable bundles shall be supported via "J" hooks

attached to the existing building structure and framework at a maximum of 3 x 4 foot intervals. Plenum rated cable ties shall be used in all appropriate areas. The Cabling Service Provider shall adhere to the manufacturer's requirements for bending radius and pulling tension of all data and voice cables. Cables shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid. Cables shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space.

B.36 CABLE REQUIREMENTS

Bidder shall provide pricing based on either "CommScope Systimax Solution or Panduit Full Channel Solution material **or Equivalent Approved Equal**. Shelby County Schools estimates that the primary Cabling Service Provider or vendor selected has the potential of providing an average of over 2,000 network cabling drops per year.

B.37 NETWORK CABLING MATERIAL

The following are a list of general list materials that a Cabling Service Provider will use to support low voltage network cabling installations, renovations repairs also including fiber optical cabling in SCBE locations. The robust LAN and WAN networks of SCBE demand the highest grade of material.

Each Bidder must provide information such as part numbers other than those listed below in their proposal with the highest grade material offered by CommScope Systimax and Panduit full channel solution products or Equivalent Approved Equal submitted in their proposal. Each Bidder must provide information containing part numbers for associated material that of the highest grade as well. This list is not exhaustive but an overview of some of the materials used in projects for SCBE:

ITEM (MATERIAL)

#	ITEM (MATERIAL)
M1.	CommScope Systimax or Equivalent Approved Equal 6 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode with/tight buffered Fiber Optic Cable,
M2.	CommScope Systimax or Equivalent Approved Equal 50 Micron 6 Strand Indoor /Plenum Fiber Cable 6-fiber OM4 Multimode OFNP (plenum) Rated Distribution Cable
M3.	CommScope Systimax or Equivalent Approved Equal - 12 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode with/tight buffered Fiber Optic Cable.
M4.	Panduit Full channel - 50 Micron 12 Strand Indoor /Plenum Fiber Cable 6-fiber OM4 Multimode OFNP (plenum) Rated Distribution Cable
M5.	CommScope Systimax or Equivalent Approved Equal - 24 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode with/tight buffered Fiber Optic Cable,
M6.	Panduit Full channel - 50 Micron 24 Strand Indoor /Plenum Fiber Cable 6-fiber OM4 Multimode OFNP (plenum) Rated Distribution Cable.
M7.	CommScope Systimax or Equivalent Approved Equal 6-fiber fan-out kit for 6 & 12 LT Cable Fan Out 6-Fibers
M8.	CommScope Systimax or Equivalent Approved Equal - 12 Strand Indoor /Plenum Fiber Cable 12-fiber OM4 10 GbE OFNR (riser) rated Stranded Cable
M9.	CommScope Systimax or Equivalent Approved Equal -50 Micron 24 Strand Indoor Fiber Cable 24-fiber OM4 10 GbE OFNR (riser) rated Stranded Cable
M10.	Panduit-or Equivalent Approved Equal 50 Micron 12 Strand Indoor Fiber Cable 12-fiber OM4 10 GbE OFNR (riser) rated Stranded Cable
M11.	Panduit- or approved equal - 50 Micron 24 Strand Indoor/Outdoor TB Fiber 24-fiber OM4 10 GbE multimode OFNR (riser) rated interlocking aluminum armored, indoor/outdoor cable w/tight buffered fibers
M12.	CommScope Systimax or Equivalent Approved Equal 50 Micron 24 Strand Indoor/Plenum Fiber Cable 24-fiber OM4 Multimode OFNP (plenum) Rated Distribution Cable
M13.	Panduit-or Equivalent Approved Equal 50 Micron 24 Strand Indoor/Plenum Fiber Cable 24-fiber OM4 Multimode OFNP (plenum) Rated Distribution Cable
M14.	CommScope Systimax or Equivalent Approved Equal Plenum Cat.6 Giga Speed Cable (Orange) Copper Cable, Enhanced Cat 6, 4-Pair, 23 AWG, UTP, CMP, Orange, 1000ft/305m
M15.	Panduit-or Equivalent Approved Equal Plenum Cat.6 Giga Speed Cable (Orange) Copper Cable, Enhanced Cat 6, 4-Pair, 23 AWG, UTP, CMP, Orange, 1000ft/305m

M16.	CommScope Systimax or Equivalent Approved Equal Plenum Cat.6 Giga Speed Cable (Blue) Copper Cable, Enhanced Cat 6, 4-Pair, 23 AWG, UTP, CMP,
M17.	Panduit- or Equivalent Approved Equal Plenum Cat.6 Giga Speed Cable (Blue) Copper Cable, Enhanced Cat 6, 4-Pair, 23 AWG, UTP, CMP, Blue, 1000 ft/305m
M18.	CommScope Systimax or Equivalent Approved Equal 25 pair Plenum Cable (for phone) Copper Cable, Cat 5e, 25-Pair, 24 AWG, UTP, CMP, Intl
M19.	Panduit- or Equivalent Approved Equal 25 pair Plenum Cable (for phone) Copper Cable, Cat 5e, 25-Pair, 24 AWG, UTP, CMP, Intl Gray, 1000 ft/305m
M20.	CommScope Systimax or Equivalent Approved Equal -Copper Cable, Cat 5e, 25-Pair, 24 AWG, UTP, CMP, Intl Gray, 1000ft/305m
M21.	Panduit-or Equivalent Approved Equal Copper Cable, Cat 5e, 25-Pair, 24 AWG, UTP, CMP, Intl Gray, 1000ft/305m
M22.	2 Pair Outdoor Mfg.- "CommScope Systimax Solution or Panduit full Channel
M23.	CommScope Systimax or Equivalent Approved Equal or Panduit full Channel Solution)
M24.	CommScope Systimax or Equivalent Approved Equal or Panduit full Channel Solution)
M25.	CommScope Systimax or Equivalent Approved Equal or Panduit full Channel Solution) 25 pair outdoor Cable w/o mess(Phone)
M26.	CommScope Systimax or Equivalent Approved Equal - 25 pair outdoor Cable
M27.	CommScope Systimax or Equivalent Approved Equal or Panduit full Channel Solution) 12/24 fiber rack mounting shelf 600B2
M28.	CommScope Systimax or Equivalent Approved Equal 12-fiber ST MM panel f/600B2
M29.	Panduit full channel solution - or Equivalent Approved Equal 12-fiber ST MM
M30.	CommScope Systimax or Equivalent Approved Equal 24-fiber ST MM panel
M31.	Panduit- or Equivalent Approved Equal 24-fiber ST MM panel f/600B2
M32.	CommScope Systimax or Equivalent Approved Equal fiber panel clear top cover
M33.	CommScope Systimax or Equivalent Approved Equal Quick Light MM ST connectors ST 62.5/125µm multimode simplex connector, electric ivory boot
M34.	Panduit- or Equivalent Approved Equal Quick Light MM ST connectors ST 62.5/125µm multimode simplex connector, electric ivory boot
M35.	CommScope Systimax or Equivalent Approved Equal 48 Port Gigaspeed Patch
M36.	CommScope Systimax or Equivalent Approved Equal 24 Port Giga Speed Patch Panel Patch Panel, 24 Port, Modular, Black

M37.	Panduit-or Equivalent Approved Equal 24 Port Giga Speed Patch Panel Patch Panel, 24 Port, Modular, Black
M38.	CommScope Systimax or Equivalent Approved Equal 6-port Cat 6 module Multimedia Modd Panel
M39.	Panduit-or Equivalent Approved Equal 6-port Cat 6 module Multimedia Modd Panel
M40.	CommScope Systimax or Equivalent Approved Equal 6-port MM ST fiber module FAP w/6 ST Simplex mm Adapters Phos
M41.	Panduit-or Equivalent Approved Equal 6-port MM ST fiber module FAP w/6 ST Simplex mm Adapters Phos
M42.	CommScope Systimax or Equivalent Approved Equal 110 Giga Speed Data Jack Mini-Com Module, Cat 6, UTP, 8 pos 8 wire,
M43.	Panduit-or Equivalent Approved Equal 110 Giga Speed Data Jack Mini-Com Module, Cat 6, UTP, 8 pos 8 wire,
M44.	CommScope Systimax or Equivalent Approved Equal Face plate 2 port Faceplate, 2 Port, Single Gang, Classic, Electric
M45.	Panduit-or Equivalent Approved Equal Face plate 2 port Faceplate, 2 Port, Single Gang,
M46.	CommScope Systimax or Equivalent Approved Equal Face plate 4 port Faceplate, 4 Port, Single Gang, Classic, Electric
M47.	Panduit-or Equivalent Approved Equal Face plate 4 port Faceplate, 4 Port, Single Gang,
M48.	CommScope Systimax or Equivalent Approved Equal Blank Modules Blank Module, 1 Port, Electric Ivory
M49.	Panduit- Blank Modules Blank Module, 1 Port, Electric Ivory
M50.	CommScope Systimax or Equivalent Approved Equal Dust Covers Clear RJ45 Dust Cap
M51.	Panduit-or Equivalent Approved Equal Dust Covers Clear RJ45 Dust Cap
M52.	CommScope Systimax or Equivalent Approved Equal Cat 6 Patch Cable 8' (gray) Copper Patch Cord, Category 6, Gray UTP Cable, 8
M53.	Panduit- Cat 6 Patch Cable 8' (gray) Copper Patch Cord, Category 6, Gray UTP Cable, 8 Feet
M54.	CommScope Systimax or Equivalent Approved Equal Cat 6 Patch Cable 8' (blue) Copper Patch Cord, Cat 6, Blue UTP Cable, 8 Feet
M55.	Panduit- Cat 6 Patch Cable 8' (blue) Copper Patch Cord, Cat 6, Blue UTP Cable, 8 Feet

M56.	CommScope Systimax or Equivalent Approved Equal Building Entrance Protector and Punch Down Box
M57.	CommScope Systimax or Equivalent Approved Equal Plug-in Protectors
M58.	Data Box Plastic Deep Anixter Single Gang Low Voltage 1-piece Outlet Box with Adh.
M59.	CommScope Systimax or Equivalent Approved Equal or Panduit full Channel Solution) Panduit--Data Box Plastic Deep Anixter Single Gang Low Voltage 1-piece Outlet Box with Adh.
M60.	Outdoor Box (various sizes and depths)
M61.	5/8 in. x 8 ft. Galvanized Ground Rod N/A
M62.	Ground Rod Clamp Mfg. Electric Motion Co. EM2DB
M63.	Ground Wire Clamp Mfg. Diamond 23-8
M64.	Drop Wire Clamp Mfg. Diamond 23-44441
M65.	"E" Drop Wire Clamp Mfg. Diamond 23-80370
M66.	"E" Drop Wire Clamp Mfg. Diamond 23-80370
M67.	8 Solid Copper Bare Ground Wire N/A
M68.	Amp Cable Management Panel 558331-1 Horizontal Panel D-
M69.	CPI--Amp Cable Management Panel 558331-1 Horizontal Panel D-Rings Front Only 2 RU
M70.	19" EIA Standard Wire Distribution Rack CPI Anixter Standard Rack - 84" High (2134mm)
M71.	Panduit--19" EIA Standard Wire Distribution Rack CPI Anixter Standard Rack - 84" High (2134mm)
M72.	Tele-communication Bus Bar CPI Anixter
M73.	Cable Runway Ladder Rack (12in. Wide) CPI Anixter Wyr-Grid Pathway, 12" W x 10' L, Black Powder Coated
M74.	Panduit--Cable Runway Ladder Rack (12in. Wide) CPI Anixter Wyr-Grid Pathway, 12" W x 10' L, Black Powder Coated
M75.	Cable Runway Support Kit (12in. Wide) CPI Anixter
M76.	"CommScope Systimax Solution Cable Management Panel Anixter

M77.	Hubbell Remote Equipment Cabinet Industrial Zone Enclosure 24"H x 24"W x 12"D
M78.	Panduit- Remote Equipment Cabinet Industrial Zone Enclosure 24"H x 24"W x 12"D
M79.	“J” Hooks (16 cables maximum) J-Pro Cable Support System Wall Mount
M80.	“J” Hooks (16 cables maximum) J-Pro Cable Support System Wall Mount
M81.	Panduit--« J « Hooks (50 cables maximum) J-Pro Cable Support
M82.	“J” Hooks(80 cables maximum)
M83.	Panduit--“J” Hooks(80 cables maximum) 1.50"(38.1mm)
M84.	(Spec Seal fire stop putty or equal)
M85.	Inner duct Anixter 127968
M86.	6 port giga speed module DM216065
M87.	MTRJ to SC – 3 meters (CommScope or Panduit) -
M88.	MTRJ to ST – 3 meters (CommScope or Panduit) -
M89.	ST to SC----- 3 meters (CommScope or Panduit or Equivalent Approved Equal) - ST-SC 62.5µm mm Dupl Patch Cord 3m
M90.	Panduit--ST to SC----- 3 meters (CommScope or Panduit or Equivalent Approved Equal) - ST-SC 62.5µm mm Dupl Patch Cord 3m
M91.	SC to SC ----- 3 meters CommScope or Panduit or Equivalent Approved Equal) - OM4 2 Fiber 1.6mm Jacket Patchcord Riser SC Duplex to SC
M92.	Panduit--SC to SC ----- 3 meters CommScope, Panduit or Equivalent Approved Equal) - OM4 2 Fiber 1.6mm Jacket Patchcord Riser SC Duplex to SC Duplex Std. IL - 3 Meters
M93.	MTRJ to MTRJ 3 meters CommScope, Panduit or Equivalent Approved Equal) -
M94.	3Com 8 Port-hub 3C16753
M95.	Tripp lite Isobar power strip (8-outlet) Isobar Surge Protector Metal 8 Outlet 12ft Cord 3840 Joules White
M96.	(WCH) Wall Connector Housing Box Wall Mount Enclosure With 4 FAP Openings
M97.	CommScope Systemax or Equivalent Approved Equal-- (WCH) Wall Connector Housing Box Wall Mount Enclosure with 4 FAP Openings

M98.	ST-fiber panels (6 port) FAP w/6 ST Simpl mm Adapters Phos
M99.	CommScope Systimax or Equivalent Approved Equal --ST-fiber panels (6 port) FAP w/6 ST Simpl mm Adapters Phos
M100.	ST-fiber panels (8 port) FAP w/8 ST Simpl mm Adapters Phos
M101.	CommScope Systimax or Equivalent Approved Equal --ST-fiber panels (8 port) FAP w/8 ST Simpl mm Adapters Phos
M102.	ST-fiber panels (12 port) FAP w/6 ST Simplex mm Adapters Phos
M103	CommScope Systimax or Equivalent Approved Equal --ST-fiber panels (12 port) FAP w/6 ST Simplex mm Adapters Phos
M104.	ST (quick light) crimp type connectors ST 62.5/125µm multimode simplex connector, electric ivory boot
M105.	CommScope Systimax or Equivalent Approved Equal --ST (quick light) crimp type connectors ST 62.5/125µm multimode simplex connector, electric ivory boot
M106.	Fan out kit (6 strand) Fan
M107.	Panduit -or Equivalent Approved Equal --Fan out kit (6 strand) Fan Out 6-Fibers
M108.	Fan out kit (12 strand) Fan Out
M109.	Panduit -or Equivalent Approved Equal --Fan out kit (12 strand) Fan Out 12-Fibers
M110.	ST to ST fiber Jumps (1 meter) OM4 2 Fiber 1.6mm Jacket Patchcord Riser ST to ST Std IL - 1 Meter
M111.	Panduit-- or Equivalent Approved Equal ST to ST fiber Jumps (1 meter) OM4 2 Fiber 1.6mm Jacket Patchcord Riser
M112.	Outdoor Enclosure 4R (for Splices) GRAYBAR DO NOT OFFER 42.00x36.00x8.00 Wall-Mount Type 4 Enclosure
M113.	Back plate/ panel----- GRAYBAR
M114.	110DW1-50- 50 PR. BLOCK (without legs)

M115.	110C-5 5 PR. Connecting block 100 Pair 110 Punchdown System Kit with 5 Pair Connector Kit
M116.	Panduit--110C-5 5 PR. Connecting block 100 Pair 110 Punchdown System Kit with 5 Pair Connector Kit
M117.	Velcro mounting tabs –ABMT-S6-C20 Cable Tie Mount, #6 Screw (M3), 1.12"x1.12" (28.5mm x 28.5mm), BL
M118.	Panduit--or Equivalent Approved Equal Velcro mounting tabs – ABMT-S6-C20 Cable Tie Mount, #6 Screw (M3), 1.12"x1.12"
M119.	Velcro Strips – Hook & Loop Tie, Loop Style, 8.0"L (203mm), .50"W (12.7mm),
M120.	Panduit--or Equivalent Approved Equal Velcro Strips – Hook & Loop Tie, Loop Style, 8.0"L (203mm), .50"W (12.7mm), Black
M121.	CommScope Systimax or Equivalent Approved Equal CMP-00424X10D- 10BU01 CABLE 436180 24 Port Panel MM08-X10D360-01 8FT Patchcord
M122.	Panduit Full Channel Solution CMP- 00423GEN-10G-01 307300 MM08-PA6A-01
M123.	CommScope Systimax or Equivalent Approved Equal or Panduit Full Channel Cat 6A - Category 6A Plenum Gigaspeed cable,
M124.	CommScope Systimax or Equivalent Approved Equal or Panduit Full Channel Category 6A Plenum Giga Speed - connectors
M125.	CommScope Systimax or Equivalent Approved Equal -Category 6A Plenum Giga Speed - 24 port patch panel

B.38.0 PERMITTING

The bid shall include all necessary permits, work and material to complete the installation of Data, Voice, Security Cabling, Electrical Wiring, and Equipment as per these specifications, the 2012 National Electrical Code and the Memphis-Shelby County Electrical Code.

B.38.1 Channel Performance of Cabling

B.38.1.A

The selected Provider shall guarantee the following Full Channel Performances for the services provided to the Shelby County Board of Education.

- B.38.1.A.1** All Balanced twisted-pair Telecommunications Cabling and Components shall conform to the Category 6 and Category 6A component specifications and the installed channels shall comply with Standards of ANSI/TIA/-568.C.2 Performance Specification.
- B.38.1.A.2** The balanced twisted pair cable and apparatus channel performance shall be guaranteed up to the maximum 100 meters (328 feet) length, including up to 6 connection points.
- B.38.1.A.3** The specifications for the 4 pair, UTP Category 6 and Category 6A channel cable. The Category 6 and Category 6A channel shall consist of all cable and components with up to six connections that comprise the full 100 meter (328 feet) length circuit from the Hub/Server/LAN Electronics port located in the Telecommunications Room or the main data administration location to the voice/data/video/imaging device port located at the User Work Station.
- B.38.1.A.4** The performance of the Category 6 and Category 6A cable shall provide a guaranteed NEXT/PSNEXT margin of 8 dB over the Category 6 and Category 6A specifications.
- B.38.1.A.5** The Category 6, and Category 6A 4 pair UTP channel shall support emerging high-bandwidth applications, including 1 Gbps Ethernet, potentially 1.2 Gbps ATM and 10 Gbps IEEE 802.3an 10GBase T June 2006, Multi-Tasked Split Screen Computing, Virtual Holographic Video Conferencing, Instant Access Telemedicine, 3D CAD/CAM Engineering, Internet-Intranet Communications/Commerce, as well as all 77 channels (500 MHz) of analog broad band video.
- B.38.1.A.6** The Category 6 cable and Category 6A channel components shall be manufactured by a single manufacturer. The manufacturer shall warrant the Category 6 and Category 6A channel cable, components, and applications for a period of 20 years.
- B.38.1.A.7** **The chosen service provider(s) are not responsible for the existing 20 year warranty SCS has with Commscope- Systemax and or Panduit. However, if certified, to work on existing cabling systems they may be chosen to be a service provider for warranty issues. SCBE reserves the right to coordinate the details of repair or the replacement of warranty issues with the manufacturer.**
- B.38.1.A.8** The Delay Skew on the 100 meter channel shall not exceed 30 ns.
- B.38.1.A.9** The Category 6 cable and components shall be electrically backward compatible with existing Category 3, 5, and 5e.
- B.38.1.A.10** The Category 6 components shall be engineered and manufactured to compensate for any compliant Category 3, 5 or 5e component crosstalk and shall provide at least Category 3, 5 or 5e performance in all of the customer's existing installed base of voice/data/video, based on the lowest category of component in the channel.
- B.38.1.A.11** The Category 6 cable and components shall be physically compatible with existing installed base of equipment.
- B.38.1.A.12** The Category 6 cable and components shall not require special cords, specialty tools or special installation requirements.
- B.38.1.A.13** The guaranteed channel performance specifications of the Category 6 and Category 6A Channel described above with cable, cords, outlets manufactured by the same manufacturer and four (4) or six (6) connections for 100 meters shall be as shown with the Minimum Performance as in the following tables below:

B.38.1.A.13.a Category 6 channel, (Minimum Performance)

Freq. (MHz)	Ins. Loss (db)	NEXT (db)	PSNEXT (db)	ACRF (db)	PSACRF (db)	TCL (db)	Return Loss (db)
1.00	2.1	65.0	62.0	63.3	60.3	40.0	19.0
4.00	4.0	63.0	60.5	51.2	48.2	40.0	19.0
8.00	5.7	58.2	55.6	45.2	42.2	36.5	19.0
10.00	6.3	56.6	54.0	43.3	40.3	35.0	19.0
16.00	8.0	53.2	50.6	39.2	36.2	31.9	18.0
20.00	9.0	51.6	49.0	37.2	34.2	30.5	17.5
25.00	10.1	50.0	47.3	35.3	32.3	29.0	17.0
31.25	11.4	48.4	45.7	33.4	30.4	27.6	16.5
62.50	16.5	43.4	40.6	27.3	24.3	23.1	14.0
100.00	21.3	39.9	37.1	23.3	20.3	20.0	12.0
200.00	31.5	34.8	31.9	17.2	14.2	15.5	9.0
250.00	35.9	33.1	30.2	15.3	12.3	14.0	8.0
350.00	-	-	-	-	-	-	-
400.00	-	-	-	-	-	-	-
500.00	-	-	-	-	-	-	-

Guaranteed Channel Performance Specifications for 6-Connection Premium Category 6 Systems
Frequency (MHz) 1 4 8 10 16 20 25 31.25 62.5 100 200 250
Insertion Loss (dB) 2.1 3.9 5.4 6.1 7.7 8.7 9.7 10.9 15.8 20.4 30.3 34.5
NEXT (dB) 69.0 67.0 62.2 60.6 57.2 55.6 54.0 52.4 47.4 43.9 38.8 37.1
ACR (dB) 66.9 63.2 56.7 54.5 49.5 47.0 44.3 41.5 31.6 23.5 8.5 2.6
PSNEXT (dB) 67.5 66.0 61.1 59.5 56.1 54.5 52.8 51.2 46.1 42.6 37.4 35.7
PSACR (dB) 65.4 62.1 55.7 53.4 48.4 45.8 43.1 40.3 30.3 22.1 7.1 1.2
ELFEXT (dB) 67.3 55.2 49.2 47.3 43.2 41.2 39.3 37.4 31.3 27.3 21.2 19.3
PSELFEXT (dB) 66.3 54.2 48.2 46.3 42.2 40.2 38.3 36.4 30.3 26.3 20.2 18.3
Return Loss (dB) 21.0 21.0 21.0 21.0 20.0 19.5 19.0 18.5 16.0 14.0 11.0 10.0
Delay (ns) 580 562 557 555 553 552 551 550 549 548 547 546
Delay Skew (ns) 30 30 30 30 30 30 30 30 30 30 30 30

Note: The table provides reference values only. All parameters comply with the governing equations given over the entire frequency range. All values and equations apply to worst-case channels utilizing four-pair Premium series cables with full cross-connects, consolidation points and work area outlets (6 connectors in a channel) for any channel lengths up to 100 meters.

Category 6 channel, 6-connection, (Premium)

Electrical Parameter
 (1 - 250MHz)
 Guaranteed Margins to draft Category 6 / Class E channel
 Specifications
 Insertion Loss 4 %
 NEXT 4 dB
 PSNEXT 5.5 dB
 ELFEXT 4 dB
 PSELFEXT 6 dB
 Return Loss 2 dB

B.38.1.A.13.b Category 6 channel, 4-connection (Premium)

Guaranteed Channel Performance Specifications for 4-Connection Premium Category 6 Systems
Frequency (MHz) 1 4 8 10 16 20 25 31.25 62.5 100 200 250
Insertion Loss (dB) 2.0 3.8 5.4 6.0 7.6 8.6 9.6 10.8 15.6 20.2 30.0 34.1
NEXT (dB) 71.0 69.0 64.2 62.6 59.2 57.6 56.0 54.4 49.4 45.9 40.8 39.1
ACR (dB) 69.0 65.2 58.8 56.6 51.6 49.1 46.4 43.6 33.7 25.7 10.8 5.0

Freq. (MHz)	Ins. Loss (db)	NEXT (db)	PSNEXT (db)	ACRF (db)	PSACRF (db)	TCL (db)	Return Loss (db)
1.00	2.3	65.0	62.0	63.3	60.3	40.0	19.0
4.00	4.2	63.0	60.5	51.2	48.2	40.0	19.0
8.00	5.8	58.2	55.6	45.2	42.2	36.5	19.0
10.00	6.5	56.6	54.0	43.3	40.3	35.0	19.0
16.00	8.2	53.2	50.6	39.2	36.2	31.9	18.0
20.00	9.2	51.6	49.0	37.2	34.2	30.5	17.5
25.00	10.2	50.0	47.3	35.3	32.3	29.0	17.0
31.25	11.5	48.4	45.7	33.4	30.4	27.6	16.5
62.50	16.4	43.4	40.6	27.3	24.3	23.1	14.0
100.00	20.9	39.9	37.1	23.3	20.3	20.0	12.0
200.00	30.1	34.8	31.9	17.2	14.2	15.5	9.0
250.00	33.9	33.1	30.2	15.3	12.3	14.0	8.0

PSNEXT (dB) 69.5 68.0 63.1 61.5 58.1 56.5 54.8 53.2 48.1 44.6 39.4 37.7

300.00	37.4	31.7	28.8	13.7	10.7	12.8	7.2
400.00	43.7	28.7	25.8	11.2	8.2	11.0	6.0
500.00	49.3	26.1	23.2	9.3	6.3	9.5	6.0

PSACR (dB) 67.5 64.2 57.7 55.5 50.4 47.9 45.2 42.4 32.4 24.3 9.4 3.5
ELFEXT (dB) 69.3 57.2 51.2 49.3 45.2 43.2 41.3 39.4 33.3 29.3 23.2 21.3
PSELFEXT (dB) 68.3 56.2 50.2 48.3 44.2 42.2 40.3 38.4 32.3 28.3 22.2 20.3
Return Loss (dB) 23.0 23.0 23.0 23.0 22.0 21.5 21.0 20.5 18.0 16.0 13.0 12.0
Delay (ns) 580 562 557 555 553 552 551 550 549 548 547 546
Delay Skew (ns) 30 30 30 30 30 30 30 30 30 30 30 30

Note: The table provides reference values only. All parameters comply with the governing equations given below over the entire frequency range. All values and equations apply to worst case channels utilizing four-pair **Premium** series cables with full cross-connects, consolidation points and work area outlets (4 connectors in a channel) for any channel lengths up to 100 meters.

Electrical Parameter
 (1 - 250MHz)
 Guaranteed Margins to draft Category 6 / Class E channel
 Specifications
 Insertion Loss 5 %
 NEXT 6 dB
 PSNEXT 7.5 dB
 ELFEXT 6 dB
 PSELFEXT 8 dB
 Return Loss 4 dB

B.38.1.B Category 6A channel, (Minimum Performance) Ref- ANSI/TIA 568-C.2

B.38.1.B.1 MINIMUM FIBER REQUIREMENTS

The Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode with/tight buffered Fiber Optic Cable, shall support single-channel serial transmission, in both the building riser and campus backbones, to 10 gigabits per second (Gb/s) for a distance of 500 meters with up to 6 LC connections.

B.38.1.B.2 The 50/125 micron fiber channel shall be backward compatible with legacy applications such as: Ethernet, Token Ring, FDDI, Fast Ethernet and ATM for in-building network distances) ensuring a smooth migration path from 40Mb/s to 10 Gb/s using achievable technology.

B.38.1.B.3 The channel shall support 10 Gb/s short wavelength (850 nm) emerging technology applications using vertical cavity surface emitting lasers (VCSELs) and low bit rate LED applications for legacy systems.

B.38.1.B.4 The 50 micron fiber shall be optimized to control differential mode delay (DMD) so that “pulse splitting” at 10 Gb/s is eliminated.

B.38.1.B.5 The Premium fiber shall use the same termination and test procedures that are currently used for the existing industry’s lower performance 50 m fiber. Fibers shall be manufactured with dual acrylate coating for maximum color retention and protection.

- B.38.1.B.6** A single manufacturer shall manufacture the 50 micron fiber cable, 50 micron fiber connectors, 50 micron patch cords and apparatus, which comprise the channel.
- B.38.1.B.7** The 50 micron fiber shall meet or exceed the following standards, as applicable, for OSP or Plenum cables: ICEA S-83-596, ISO/IEC-794, GR-409, TIA/EIA455, TIA/EIA492, TIA/EIA568-C, ANSI-FDDI, IEEE 802.3an 10GBaseT, UL 910, OFNP classification as described in the National Electric Code (NEC2), OFN-LS Low Smoke Cables, CSA Certified (OFN FT4/FT6) and approved component industry standards.
- B.38.1.B.8** The manufacturer shall warrant the 10 Gb/s channel's cable, components, and applications for a period of 20 years.
- B.38.1.C** The 50/125 micron OM4 Multimode Guaranteed Channel Performance.
- B.38.1.C.1** The 50/125 micron OM4 fiber channel shall support single-channel serial transmission, in both the building riser and campus backbones, to 10 gigabits per second (Gb/s) for a distance of 500 meters with up to 6 LC connections.
- B.38.1.C.2** The 50/125 micron fiber channel shall be backward compatible with legacy applications such as: Ethernet, Token Ring, FDDI, Fast Ethernet and ATM for in-building network distances) ensuring a smooth migration path OM4 40Mb/s to 10Gb/s using achievable technology.
- B.38.1.C.3** The channel shall support 10 Gb/s short wavelength (850 nm) emerging technology applications using vertical cavity surface emitting lasers (VCSELs) and low bit rate LED applications for legacy systems.
- B.38.1.C.4** The 50 m fiber shall be optimized to control differential mode delay (DMD) so that "pulse splitting" or modal dispersion at 10Gb/s is eliminated.
- B.38.1.C.5** The Premium fiber shall use the same termination and test procedures that are currently used for the existing industry's lower performance 50 m fiber. Fibers shall be manufactured with dual acrylate coating for maximum color retention and protection.
- B.38.1.C.6** A single manufacturer shall manufacture the 50 m fiber cable, 50 m fiber connectors, 50 m patch cords and apparatus, which comprise the channel.
- B.38.1.C.7** The 50 m fiber shall meet or exceed the following standards, as applicable, for OSP or Plenum cables: ICEA S-83-596, ISO/IEC-794, GR-409, TIA/EIA455, TIA/EIA492, ANSI/TIA-568-C, ANSI-FDDI, IEEE 802.3, UL 910, OFNP classification as described in the National Electric Code (NEC2), OFN-LS Low Smoke Cables, CSA Certified (OFN FT4/FT6) and approved component industry standards.
- B.38.1.C.8** The manufacturer shall warrant the 10 Gb/s channel's cable, components, and applications for a period of 20 years.
- B.38.2** **Outlets**
- B.38.2.A** Outlet Locations
- B.38.2.A.1** Unless otherwise noted on the floor plans or within this document, all voice and data wall outlets for 23/24 AWG balanced twisted pair cable shall be:
 - B.38.2.A.1.a** 8-position/ 8-conductor modular outlets
 - B.38.2.A.1.b** Insulation displacement

- B.38.2.A.1.c** Support Universal applications in a multi-Cabling Service Provider environment, accepting modular RJ-45 plugs.
- B.38.2.A.1.d** Provided with blank module inserts for all unused module locations. Jack module arrangement is shown on the drawings. Provide color coded inserts at each outlet, termination block and at patch panels as shown on the drawings.
- B.38.2.A.1.e** Mounted in one, two or three gang utility outlet boxes.
- B.38.2.A.1.f** Equipped with EIA/TIA-T568A and EIA/TIA-T568B universal wiring labels.
- B.38.2.B** Category 6 Gigabit outlets
- B.38.2.B.1** All Category 6 outlets shall meet or exceed Category 6 transmission requirements for connecting hardware, as specified in ANSI/TIA-568-C.2 Commercial Building Telecommunications Cabling Standard and ISO/IEC11801:2002 Second Edition.
- B.38.2.B.2** The Category 6 outlets shall be backward compatible with Category 5e, 5 and 3 cords and cables.
- B.38.2.B.3** The Category 6 outlets shall be of a universal design supporting T568 A & B wiring. The lead frame pins will consist 1.27-micron gold plating, over 2.54-micron nickel, over the base metal phosphorus bronze and will be rated for 200 re-terminations and 750 insertions.
- B.38.2.B.4** The Category 6 and Category 6A outlets shall be capable of being in a modular patching situation or as a modular telecommunication outlet (TO) supporting current 10BASE-T, Token Ring, 100 Mbps TP-PMD, 155 Mbps ATM, 622 Mbps ATM using parallel transmission schemes and evolving high-speed, high-bandwidth applications, including Ethernet, 1000BASE-T and 10 Gbps ATM.
- B.38.2.B.5** The Category 6 and Category 6A outlets shall be capable of being installed at either a 45 or a 90 angle in the faceplate, frame, or surface-mounted box avoiding the need for special faceplates. Terminations will be rated at 200 with 750 insertions.
- B.38.2.B.6** The Category 6 and Category 6A outlets shall have improved pair splitters and wider channel for enhanced conductor placement, and have a current rating of 1.5 Amps. The outlet shall also have a low-profile wire cap, which protects against contamination and secures the connection. Multicolored identification labels shall be available to assure accurate installation.
- B.38.2.B.7** General specifications:
- B.38.2.B.7.a** Meets or exceeds the mechanical, electrical, and clearance specifications in FCC Rules and Regulations, Part 68, Subpart F
- B.38.2.B.7.b** Meet or exceed the Category 6 requirements in ISO/IEC 11801, CENELEC EN50173, and ANSI/TIA-568-C.2.
- B.38.2.B.7.c** Certifications: UL Listed, CSA Certified and AUSTEL approved.
- B.38.2.B.8** The Category 6 outlets shall meet the following Guaranteed Margin Performance and Physical Specifications:
- B.38.2.B.8.a** Guaranteed Margin:
Category 6
Outlet

Premium
Channel
Premium
Performance Channel
(4 Connections)
Typical Worst
Pair Margin*
Guaranteed
Margin**
Guaranteed
Margin**
Insertion Loss 26.9% 5.0% 7.5%
NEXT 5.4 dB 6.0 dB 7.0 dB
PSNEXT 4.7 dB 7.5 dB 8.5 dB
ELFEXT 10.5 dB 6.0 dB 8.0 dB
PSELFEXT 10.8 dB 8.0 dB 10.0 dB
Return Loss 8.0 dB 4.0 dB 4.0 dB
Frequency Range 1-250 MHz 1-250 MHz 1-250 MHz

* Typical worst pair swept margin when measured with same manufacturer's Category 6 modular patch cord.

**Guaranteed margin is valid at any frequency from 4-250 MHz for the single manufacturer's certified channel comprising the single manufacturer's Category 6 apparatus and the single manufacturer's Premium series cable or Premium Performance series. Values represent margin over the draft Category 6/Class E channel specifications.

- B.38.2.B.8.b** Physical Specifications:
Dimensions 0.8 in (20 mm) W x 0.8 in (20 mm) H x 1.2 in (31 mm) D
Plastic High-impact, flame-retardant, UL rated 94V-0 thermoplastic
Connector Copper alloy, 100 micro-inch bright solder over 100 micro-inch nickel underplate
Outlet Wires Copper alloy, 50 micro-inch lubricated gold plating over 100 micro-inch nickel underplate
Operating Temperature 14°F to 140°F (-10°C to 60°)
Storage Temperature Range -40°F to 158°F (-40°C to 70°C)
Humidity 95% (noncondensing)
Nominal Solid Conductor Diameter: 0.025 to 0.020 in (22 to 24 AWG)
Nominal Stranded Conductor Diameter 0.64 to 0.51mm (22 to 24 AWG)
Plug Retention Force 30lb (133 N) minimum
Plug / Jack Contact Force 100 grams minimum per contact using FCC-8 position telecommunication plug
Insertion Life 750 cycles minimum using FCC-8 position telecommunication plug

B.38.3 Cable

B.38.3.A Category 6 UTP, 4 Pair (Premium)

B.38.3.A.1 The high-performance Category 6 UTP cable shall be of the traditional round design with Mylar bisector tape.

B.38.3.A.2 The cable shall support Voice, Analog Baseband Video/Audio, Fax, Modem, Switched-56, T-1, SDN, RS-232, RS422, RS-485, 10BASE – T Ethernet, Token Ring, 100Mbps TP-PMD, 100BASE-T Ethernet, 155 Mbps ATM, AES/EBU Digital Audio, 270 Mbps Digital Video, 622 Mbps 64-CAP ATM and emerging high-bandwidth applications, including 1 Gbps Ethernet, gigabit ATM, IEEE 1394B S100 and S400, as well as all 77 channels (550 Mhz) of analog broadband video.

- B.38.3.A.3** The cable jacket shall comply with Article 800 NEC for use as a plenum or non-plenum cable. The 4 pair UTP cable shall be UL and c (UL) Listed Type CMP (plenum) or CM (non-plenum).
- B.38.3.A.4** Performance shall be characterized to 550 MHz to support high-bandwidth video applications
- B.38.3.A.5** All Category 6 Premium cables shall the following specification:
- B.38.3.A.5.a** Specifications:
 Plenum
 Weight 25.3 lb (1000 ft) 29 lb (1000 ft)
 Jacket Thickness .022 in .020 in
 Outside Diameter 0.232 in 0.22 in
 Conductor Diameter .022 in .022 in
 Insulation Type High density Polyethylene Fluorinated-Ethylene-Propylene
 Jacket Material PVC Low Smoke PVC
 Maximum Pulling Tension 25 lbs 25 lbs
 Nom. Velocity of Propagation 0.69 0.72
 Max DC Resistance 9.83 Ohms/100m 9.83 Ohms/100m
 Mutual Capacitance @ 1kHz 4.95 nF/100m 4.78 nF/100m
 Operating Temperature -20 to 60° C -20 to 60° C
 UL Type CMR & CMG CMP
- B.38.3.A.6** The high-performance Category 6 cable shall be specified to 500 MHz and shall meet the guaranteed swept margin as follows:
- B.38.3.A.6.a** Guaranteed Margin:
 High
 Performance
 Cable
 High
 Performance
 Channel
 Premium
 Performance
 Channel
 (4 Connections)
 Typical Worst
 Pair Margin*
 Guaranteed
 Margin**
 Guaranteed
 Margin**
 Insertion Loss 3.0 % 5.0% 7.5%
 NEXT 6.0 dB 6.0 dB 7.0 dB
 PSNEXT 6.0 dB 7.5 dB 8.5 dB
 ELFEXT 5.0 dB 6.0 dB 8.0 dB
 PSELFEXT 5.0 dB 8.0 dB 10.0 dB
 Return Loss 4.0 dB 4.0 dB 4.0 dB
 Frequency Range 1-550 MHz 1-250 MHz 1-250 MHz
 * Typical worst pair swept margin.
 **Guaranteed margin is valid at any frequency from 4-250 MHz for the single manufacturer's certified channel comprising the single manufacturer's Category 6 apparatus and the single manufacturer's High-Performance series cable or Premium Performance series. Values represent margin over the TIA/EIA Category 6/Class E channel specifications.
- B.38.3.B** **Category 6 UTP, 4 Pair (Premium Performance)**
- B.38.3.B.1** The premium performance Category 6 UTP cable shall be a fluted (cross separator) design.

- B.38.3.B.2** The cable shall support Voice, Analog Baseband Video/Audio, Fax, Modem, Switched-56, T-1, ISDN, RS-232, RS422, RS-485, 10BASE – Ethernet, Token Ring, 100Mbps TP-PMD, 100BASE-T Ethernet, 155 Mbps ATM, AES/EBU Digital Audio, 270 Mbps Digital Video, 622 Mbps 64-CAP ATM and emerging high-bandwidth applications, including 1 Gbps Ethernet, IEEE 1394B S100 and S400, gigabit ATM, as well as all 77 channels (550 Mhz) of analog broadband video.
- B.38.3.B.3** The premium performance Category 6 UTP cable shall provide **guaranteed margin (headroom)** of 10dB above TIA/EIA Category 6 standard NEXT and PS NEXT requirements; and shall provide positive ACR to 461 MHz
- B.38.3.B.4** Cable jacket shall comply with Article 800 NEC for use as a plenum or non-plenum cable. The 4 pair UTP cable shall be UL and c(UL) Listed Type CMP (plenum) or CM (non-plenum).
- B.38.3.B.5** All Category 6 premium performance cables shall meet the following specifications:
- B.38.3.B.6.a** Specifications:
 Plenum
 Weight 28.5lb (12.93kg) 32.7lb (14.38kg)
 Jacket Thickness 0.020 in (0.50 mm) 0.017 in (0.43 mm)
 Outside Diameter 0.25 in (6.4 mm) 0.23 in (6.1 mm)
 Conductor Diameter 0.0225 in (0.57 mm) 0.0225 in (0.57 mm)
 Insulation Type High-density Polyethylene Fluorinated-Ethylene-Propylene
 Jacket Material PVC Low Smoke PVC
 Maximum Pulling Tension 25 lbs. 25 lbs.
 Nom. Velocity of Propagation 0.69 0.72
 Max DC Resistance 9.83 Ohms/100m 9.83 Ohms/100m
 Mutual Capacitance @ 1kHz 4.95 nF/100m 4.78nF/100m
 Operating Temperature -20° to 60° C -20° to 60° C
 UL Type CMR & CMG CMP
- B.38.3.B.7** The premium performance Category 6 cable shall be specified to 500 MHz and shall meet the guaranteed swept as follows:
- B.38.3.B.7.a** Guaranteed Margin:
 High
 Performance
 Cable
 High
 Performance
 Channel
 Premium
 Performance
 Channel
 (4 Connections)
 Typical Worst
 Pair Margin*
 Guaranteed
 Margin**
 Guaranteed
 Margin**
 Insertion Loss 3.0 % 5.0% 7.5%
 NEXT 6.0 dB 6.0 dB 7.0 dB
 PSNEXT 6.0 dB 7.5 dB 8.5 dB
 ELFEXT 5.0 dB 6.0 dB 8.0 dB
 PSELFEXT 5.0 dB 8.0 dB 10.0 dB
 Return Loss 4.0 dB 4.0 dB 4.0 dB
 Frequency Range 1-550 MHz 1-250 MHz 1-250 MHz
 * Typical worst pair swept margin.
- **Guaranteed margin is valid at any frequency from 4-250 MHz for the single manufacturer's certified channel comprising the single manufacturer's Category 6 apparatus and the single manufacturer's Premium series cable or Premium

Performance series. Values represent margin over the TIA/EIA category 6/Class E channel specifications.

B.38.3.C Balanced Twisted Pair Cable - Building Riser

B.38.3.C.1 Shielded or unshielded 24AWG multi-pair copper cables shall be used as the vertical riser cables. The cable shall support voice and data applications.

B.38.3.C.1.a Shielded

B.38.3.C.1.a.i The shielded no plenum cable shall consist of solid-copper conductors insulated with expanded polyethylene covered by a PVC skin, be conformance tested to meet TIA/EIA568-B for Category 3 cables, be UL and c(UL) Listed as CMR. The core shall be overlaid with a corrugated aluminum sheath, which is adhesively bonded to an outer jacket of PVC plastic to form an ALVYN sheath.

B.38.3.C.1.a.ii The PVC sheath shall have improved frictional properties, allowing it to be pulled through conduit without the use of lubricants.

B.38.3.C.1.a.iii The cable shall be available in 25, 50, 100, 150, 200, 300 pair counts.

B.38.3.C.1.a.iv UL and c(UL) Listed for Fire Safety

B.38.3.C.1.a.v ISO 9001 Certified Manufacturer

B.38.3.C.1.a.vi The balanced twisted pair riser cable shall meet or exceed the following electrical specifications listed below:

Electrical Specifications:

Average DC Resistance 26.5/1,000 ft (8.7/100m), maximum

Average DC Resistance Unbalance 1.7%, maximum

Mutual Capacitance @ 1kHz 16 nF/1000 ft (5.25 nF/100 m), maximum

Capacitance Unbalance (pair to ground) 201pF/1,000 ft (65.94 pF/100m) maximum

Attenuation (dB/100 m [328 ft.]:

Frequency Attenuation (Max.)

1.00 MHz 2.3 dB

4.00 MHz 4.9 dB

10.00 MHz 8.5 dB

16.00 MHz 12 dB

Worst Pair Near-End Crosstalk (NEXT) dB/100 m [328 ft]:

Frequency Pair-To-Pair

NEXT (Max.)

1.0 MHz 13.8 dB

4.0 MHz 11.2 dB

10.0 MHz 10.2 dB

16.0 MHz 9.2 dB

B.38.3.C.1.b Non-shielded Plenum 25, 50 and 100 pair

B.38.3.C.1.b.i The non-shielded plenum cable shall consist of 24-AWG solid-copper conductors insulated with color coded PVC, 25 pair cable shall be UL Verified to TIA/EIA568-B for Category 3.

B.38.3.C.1.b.ii UL and c(UL) Listed for Fire Safety

B.38.3.C.1.b.iii ISO 9001 Certified Manufacturer

B.38.3.C.1.b.iv The non-shielded cable shall be available in 25, 50 and 100 pair. The balanced twisted pair cable shall meet or exceed the following electrical specifications listed below:

Electrical Specifications:

Maximum DC Resistance 28.6 /1,000 ft (9.4 /100m)

Maximum DC Resistance Unbalanced 5%

Maximum Capacitance Unbalanced (pair to ground)

1,000 pF/1000 ft. (328 pF/m)

Mutual Capacitance @ 1kHz 18 nF/1000 ft (5.9 nF/100 m), maximum

Attenuation (dB/100 m [328 ft.]):

Frequency Attenuation (Max.)

1.00 MHz 2.3 dB

4.00 MHz 4.9 dB

1

0.00 MHz 8.5 dB

16.00 MHz 12 dB

Worst Pair Near-End Crosstalk (NEXT) dB/100 m [328 ft]:

Frequency Pair-To-Pair NEXT (Max.)

1.0 MHz 13.8 dB

4.0 MHz 11.2 dB

10.0 MHz 10.2 dB

16.0 MHz 9.2 dB

B.38.3.C.1.c Non-shielded 200 and 300 pair

B.38.3.C.1.c.i 24 AWG twisted pair copper conductors individually insulated with various PVC compounds and sheathed with a PVDF outer jacket. For use in building backbone applications between the equipment room and the telecommunications rooms. Can be connected in the field or terminated on 110 Wiring Blocks.

B.38.3.C.1.c.ii The cables are compliant to TIA/EIA568-A Category 3 backbone cable specification. The cables support the following applications: Analog and digital voice, ISDN, IEEE 802.5 4 Mbps, IEEE 802.3 10BASE-T, 10Mbps ETHERNET, 100 VG-ANYLAN.

B.38.3.C.1.c.iii The cables are plenum rated for use in air handling ducts and spaces in accordance with Article 800 of the National Electrical Code (NEC). The cable is UL (USA) & c (ul) (Canada) listed type CMP/MPP for this application by passing UL 910 (Steiner Tunnel) test.

B.38.3.D **Balanced Twisted Pair Cable - Campus**

B.38.3.D.1 Outside Plant Balanced twisted pair Cables

B.38.3.D.1.a All voice grade wire and cable placed in the outside environment shall be solid, twisted pair, and multi-conductor. The copper twisted pairs shall have a mutual capacitance at 1 kHz of 15.7 nF/1,000 ft. The cable shall be resistant to mechanical damage, lightning or damage from wildlife.

B.38.3.D.1.b The aerial air core cable shall be a self-supporting or lashed cable consisting of plastic-insulated solid conductors covered by a plastic core wrap and surrounded by an inner polyethylene jacket, a corrugated aluminum shield, a corrugated steel wrap and a bonded polyethylene jacket (PASP).

B.38.3.D.1.c The buried or underground cable shall have an aluminum steel polyethylene (ASP) sheath and a core of solid-copper conductors, dual insulated with foam skin and plastic, surrounded by filling compound.

B.38.3.D.1.d ISO 9001 Certified Manufacturer

B.38.3.D.1.e The multi-pair balanced twisted pair cables shall meet the following specifications:

Physical Specifications:

Gauge 24 AWG
Pair Size 25 to 1,800

Electrical Specifications:

DC Resistance 27.3/1000 ft (8.96/100m), maximum
Mutual Capacitance (@ 1kHz) 15.7 nF/1000 ft (5.15 nF/100m) (25 pair), maximum
Impedance 100 (25 pair)

Buried/Underground Cable Attenuation (db/1,000 ft [305m]):

at 772 kHz 5.6 (25 pair), maximum
at 1.0 MHz 6.4 (25 pair), maximum

Aerial Cable Attenuation (dB/1,000 ft [305m]):

at 772 kHz 5.9 (25 pair), maximum
at 1.0 MHz 6.7 (25 pair), maximum

B.38.3.E **Category 6 Outside Plant Cable - 4 Pair UTP**

B.38.3.E.1 The Category 6 OSP Cable shall be used for very low count user locations that need an end-to-end solution for a campus link back to a telecommunications room.

B.38.3.E.2 The cable shall be used with the Category 6 Protector Unit specified under Balanced twisted pair Cable Protection Units in this document.

B.38.3.E.3 The 23 gauge cable shall consist of polyethylene, insulated conductors, twisted into four pairs, stranded around a polyolefin center member, filled with a flooding compound and jacketed with a black polyethylene jacket.

B.38.3.E.4 The cable shall be fully compliant Category 6 requirements of ANSI/TIA/ 568-C.2 and ISO/IEC 11801.

B.38.3.E.4.a Physical Specification:

Gauge 23 AWG
Weight 27 lbs./1000 ft.
Cable Diameter 0.250 in.
Pair Count 4
Operating Temperature -40° to 158° F (-40° to 70° C)
Installation Temperature 32° to 140° F (-0° to 60° C)
Max Pulling Tension 50 lbs.

B.38.3.E.4.b Electrical Specification:

Nom. Velocity of Prop. (NVP) 0.62
Max. DC Resistance 8.16 Ω /100m
Max. DC Resistance Unbal 2.5%
Mut. Capacitance @ 1 kHz 5.2 nF/100m

B.38.3.E.4.c Minimum Electrical Specifications dB/328 ft. (dB/100M)

Frequency
(MHz)/100m)
(dB/100m)
(dB/100m) (dB/
Insertion Loss
(db/100M)
NEXT
(db/100M)
PS-NEXT
(db/100M)
ELFEXT
(db/100M)

PS-ELFEXT
(db/100M)
RL
(db)
1 2.0 74.3 72.3 67.8 64.8 20.0
4 3.8 65.3 63.3 55.8 52.8 23.0
8 5.3 60.8 58.8 49.7 46.7 24.5
10 6.0 59.3 57.3 47.8 44.8 25.0
16 7.6 56.2 54.2 43.7 40.7 25.0
20 8.5 54.8 52.8 41.8 38.8 25.0
25 9.5 53.3 51.3 39.8 36.8 24.3
31.25 10.7 51.9 49.9 37.9 34.9 23.6
62.5 15.4 47.4 45.4 31.9 28.9 21.5
100 19.8 44.3 42.3 27.8 24.8 20.1
155 25.2 41.4 39.4 24.0 21.0 18.8
200 29.0 39.8 37.8 21.8 18.8 18.0
250 32.8 38.3 36.3 19.8 16.8 17.3

B.38.4 The High-Density Category 6 Patch Panel System

B.38.4.A The high-density Category 6 patch panel system shall support emerging high bandwidth applications, including 1 Gbps Ethernet, potentially 1.2 Gbps ATM and 2.4 Gbps ATM, Multi-Tasked Split Screen Computing, Virtual Holographic Video Conferencing, Instant Access Telemedicine, 3D CAD/CAM Engineering, Internet-Intranet Communications/Commerce, as well as all 77 channels (550 MHz) of analog broad band video. The high-density Category 6 patch panel system shall incorporate a lightweight structural foam back panel.

The footprint of the back panel shall be same as traditional 110 system wall mounting hardware but shall be capable of 336 conductor pair terminations instead of the traditional 300 conductor pairs. The high-density Category 6 patch panel system shall facilitate the stacking of 3 panels to create a vertical field capable of 1008 terminations of conductors versus the 900 terminations of traditional systems. The three (3) panel high vertical field shall allow installation of 252 4-pair patch cords.

B.38.4.B All high-density category 6 patch panel system components shall snap together without the use of tools. In addition to a lightweight structural foam back panel, the system shall consist of the following:

B.38.4.B.1 High-Density Wiring Block

B.38.4.B.2 Back panels that shall hold twelve (12) snap-in 110 wiring blocks. The snap-in wiring blocks shall terminate up to 28 pairs per row verses 25 pairs per row in the traditional 110 wiring block. The high-density wiring blocks shall utilize traditional IDC conductor spacing to maintain the highest density per square foot of wall space in the telecommunications room.

B.38.4.B.3 The high-density wiring block shall allow the connection of seven (7) 4-pair patch cords per row versus six (6) for traditional 110 wiring blocks. One back panel with 12 high-density wiring blocks shall allow the connection of eighty-four (84) 4-pair patch cords verses seventy-two (72) for traditional 300 pair 110 patch panels.

B.38.4.B.4 Each high-density wiring block shall utilize a snap-on cover plate for cable termination protection and for labeling of the conductor pairs/cables

B.38.4.B.5 Distribution rings for vertical cable management shall snap into the sides of the structural foam back panel.

B.38.4.B.6 The manufacturer shall have a website available to the end-user for printing custom labels for the high-density wiring blocks.

B.38.5 Category 6 Modular Patch Panels

- B.38.5.A** 24 and 48 port patch panels with 110 IDC connector terminations on rear
- B.38.5.A.1** The panel shall have electrical performance guaranteed to meet or exceed ANSI/TIA/568-C.2 Category 6 and ISO/IEC Category 6/Class E specifications.
- B.38.5.A.2** The panel shall have vertical and horizontal cord organizers available as to improve patch cord management, in addition to having terminations managers to avoid inconsistent terminations.
- B.38.5.A.3** The panel shall be available in 24-port and 48-port configurations, with universal A/B labeling and 110 connector terminations on rear of panel allowing for quick and easy installation of 22 to 24 AWG cable.
- B.38.5.A.4** The panel shall have a black powder finish over high-strength steel.
- B.38.5.A.5** The panel shall be equipped with a removable rear mounted cable management bar and front and rear labels.
- B.38.5.A.6** The panel shall be UL listed, UL-C certified and ACA approved.
- B.38.5.A.7** The panel shall support network line speeds in excess of 1 gigabit per second and be backward compatible with Category 5e, 5 and 3 cords and cables.
- B.38.5.A.8** The Category 6 modular jack panels shall meet or exceed the Category 6/Class E standards requirements in ISO/IEC 11801, CENLEC EN 50173 and TIA/EIA and shall be UL Listed.
- B.38.5.A.9** The panels shall be either wall or 19-inch rack mountable.
- B.38.5.A.10** The panels shall meet the following minimum specifications:
Performance Specifications:
High
Performance
Premium
Performance
Category 6
Patch Panel
Solution
**Category 6 Channel
(4 Connectors)
Typical Worst Guaranteed
Pair Margin* Margin** Margin****
Insertion Loss 64.3% 5.0% 7.5%
NEXT 6.6 dB 6.0 dB 7.0 dB
PSNEXT 7.3 dB 7.5 dB 8.5 dB
ELFEXT 6.4 dB 6.0 dB 8.0 dB
PSELFEXT 6.1 dB 8.0 dB 10.0 dB
Return Loss 6.6 dB 4.0 dB 4.0 dB
Frequency Range 1-250 MHz 1-250 MHz 1-250 MHz
* Typical worst pair swept margin when measured with a GS8E modular patch cord.
**Guaranteed margin must be valid at any frequency from 4-250 MHz for a certified channel Comprising Solution.
Values represent margin over the draft Category 6/Class E Channel specifications.
- Physical Specifications:
Dimensions (Width x Height x Depth)
24-Port Patch Panel 19.0 x 1.75 x 1.60 in (48.26 x 4.38 x 4.06 cm) - Universal A/B labeling
48-Port Patch Panel 19.0 x 3.50 x 1.60 in (48.26 x 8.83 x 4.06 cm) - Universal A/B labeling
Intra-bay organizer 20.0 x 3.50 x 4.50 in (50.8 x 8.89 x 11.43 cm) – Front Horizontal/Vertical routing
Inter-bay organizer 19.0 x 3.50 x 3.75 in (48.26 x 8.89 x 9.53 cm) – Front Horizontal routing
Intra-bay organizer 19.0 x 1.72 x 4.60 in (48.30 x 4.38 x 11.70 cm)- Front & back routing
2U Wall Mount Bracket 19.0 x 3.50 x 3.59 in (48.30 x 8.89 x 12.70 cm)

4U Wall Mount Bracket 19.0 x 7.00 x 3.59 in (48.30 x 17.78 x 12.70 cm)
 Operational Specifications:
 Operating Temperature Range: 14°F to 140°F (-10°C to 60°C)
 Storage Temperature Range: -40°F to 158°F (-40°C to 70°C)
 Humidity: 95% (noncondensing)
 Nominal Solid Conductor Diameter: 0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)
 Nominal Stranded Conductor Diameter: 0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)
 Insulation Size: 0.042 in (1.08 mm) (22 to 24 AWG) Maximum DOD
 Insulation Types: All plastic insulates (including PVC, irradiated PVC, Polyethylene, Polypropylene, PTF Polyurethane, Nylon, and FEP)
 Insertion Life: 750 minimum insertions of an FCC 8-Position Telecommunications Plug
 Front Panel: Black powder painted steel.
 Plastic: High-impact, flame retardant, UL-rated 94V-0 thermoplastic
B.38.5.B 24 and 48 port patch panels with front patch cord retainer & rear cable retainer:

B.38.5.B.1 The Category 6 modular jack panels shall meet or exceed the proposed Category 6 standards requirements in ISO/IEC 11801, CENLEC EN 50173 and TIA/EIA and shall be UL Listed.

B.38.5.B.2 The modular jack panel shall utilize universal A/B wiring.

B.38.5.B.3 The jack panels shall be either wall or 19-inch rack mountable.

B.38.5.B.3.i Physical Specifications:
 24 Port Patch Panel 19.0 x 3.50 x 1.25 in (48.26 x 8.90 x 3.20 cm) 2 Rack Unit
 Universal A/B labeling
 48 Port Patch Panel 19.0 x 5.25 x 1.25 in (48.26 x 13.34 x 3.20 cm) - 3 Rack Unit
 Universal A/B labeling
 Operating Temperature Range 14°F to 140°F (-10°C to 60°C)
 Storage Temperature Range -40°F to 158°F (-40°C to 70°C)
 Humidity 95% (noncondensing)
 Nominal Solid Conductor Diameter 0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)
 Nominal Stranded Conductor Diameter 0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)
 Insulation Size 0.042 in (1.08 mm) (22 to 24 AWG) Maximum DOD
 Insulation Types All plastic insulates (including PVC, irradiated PVC, Polyethylene, Polypropylene, PTF Polyurethane Nylon and FEP)
 Modular Jack Insertions 750 minimum insertions of an FCC 8-Position Telecommunications Plug
 Front Panel Black powder painted steel.
 Modular Panels High-impact, flame retardant UL-rated 94V-0 thermoplastic

B.38.5.B.3.ii Guaranteed Margin:
 Category 6
 Patch Panel
 High
 Performance
 Channel
 Premium
 Performance
 Channel
 (4 Connections)
 Typical Worst
 Pair Margin*
 Guaranteed
 Margin**
 Guaranteed
 Margin**
 Insertion Loss 64.8% 5.0% 7.5%
 NEXT 6.6 dB 6.0 dB 7.0 dB
 PSNEXT 7.2 dB 7.5 dB 8.5 dB
 ELFEXT 6.7 dB 6.0 dB 8.0 dB
 PSELFEXT 6.4 dB 8.0 dB 10.0 dB
 Return Loss 6.7 dB 4.0 dB 4.0 dB
 Frequency Range 1-250 MHz 1-250 MHz 1-250 MHz

* Typical worst pair swept margin when measured with same manufacturer's Category 6 patch cord.

**Guaranteed margin is valid at any frequency from 4-250 MHz for the single manufacturer's certified channel comprising the single manufacturer's Category 6 apparatus and the single manufacturer's Premium series cable or Premium Performance series. Values represent margin over the draft Category 6/Class E channel specifications.

B.38.6 Balanced Twisted Pair Patch Cords

B.38.6.A Category 6 Patch Cords

B.38.6.A.1 All patch cords shall exceed ANSI/TIA and ISO/IEC Category 6/Class E specifications.

B.38.6.A.2 All patch cords shall be backward compatible with Category 5 and Category 5e systems.

B.38.6.A.3 The patch cords shall incorporate an anti-snag feature that provides maximum protection from snagging during moves and rearrangements.

B.38.6.A.4 Patch cords shall be UL listed, UL-C certified and AUSTEL approved.

B.38.6.A.5 Patch cords shall support network line speeds in excess of 1 gigabit per second.

B.38.6.A.6 Patch cords shall be available in stranded and solid conductor in lengths to 100 feet.

B.38.6.A.7 The Category 6 modular patch cord shall have guaranteed margin as follows:

B.38.6.A.7.i Guaranteed Margin:
Category 6
Modular
Patch Cord
(4 Pair)
High
Performance
Channel
Premium
Performance
Channel
(4 Connections)
Typical Worst
Pair Margin*
Guaranteed
Margin**
Guaranteed
Margin**
Insertion Loss NA 5.0% 7.5%
NEXT 4.4 dB 6.0 dB 7.0 dB
PSNEXT NA 7.5 dB 8.5 dB
ELFEXT NA 6.0 dB 8.0 dB
PSELFEXT NA 8.0 dB 10.0 dB
Return Loss 5.9 dB 4.0 dB 4.0 dB
Frequency Range 1-250 MHz 1-250 MHz 1-250 MHz

* Typical worst pair swept margin to TIA Patch cord specification when measured with same manufacturer's Category 6 telecommunications outlet.

**Guaranteed margin is valid at any frequency from 4-250 MHz for the single manufacturer's certified channel comprising the single manufacturer's Category 6 apparatus and the single manufacturer's Premium series cable or Premium Performance series. Values represent margin over the draft Category 6/Class E channel specifications.

B.38.7 Product Warranty and Application

B.38.7.A The Structured Connectivity Solutions Extended Product Warranty and Application Extended Product Warranty.

The chosen service provider(s) are not responsible for the existing 20-year warranty SCS has with Commscope- Systimax and or Panduit. However, if certified, to work on existing cabling systems they may be chosen to be a service provider for warranty issues by the manufacturer. SCBE reserves the right to coordinate the details of repair or the replacement of warranty issues with the manufacturer

The extended Product Warranty for the existing CommScope and Systimax is between the manufacturer and SCBE. Therefore, any extended product warranty issues they may arise will be handled through negotiations between SCBE and the manufacturer companies. SCBE and the manufacturer reserves the right to choose a certified service provider to fulfill work request concerning warranty issues. This may not be the successful chosen service providers of this RFP.

The Extended Product Warranty covers all passive Registered Cabling Service Provider components (i.e., cable and connectivity components that make up the passive data and telecommunications signal transmission infrastructure).

"Passive Components" are defined as Cabling Service Provider components that exhibit no gain or contribute no energy. The supplier warrants, from the original installation completion date, provided a registration certificate is issued by the supplier to the customer, the following:

- B.38.7.A.1** That the Passive Components of Registered Cabling Service Provider will be free from manufacturing defects in material and workmanship under normal and proper use;
- B.38.7.A.2** That all Passive Components in the Registered Cabling Service Provider meet or exceed the relevant component specification of the ANSI/TIA 568-C series and ISO/IEC 11801: 2002 standards;
- B.38.7.A.3** That the Registered Cabling Service Provider compliant links/channels will meet or exceed the applicable requirements of the ANSI/TIA 568-C series, and ISO/IEC 11801: 2002 standards for cabling links/channel configurations specified in these standards;
- B.38.7.A.4** That the Registered Cabling Service Provider compliant channels will additionally meet or exceed the Guaranteed Channel Performance in the Cabling Service Provider Performance Specifications in effect at the time of installation. Under the Extended Product Warranty, the supplier will (or will authorize an installer to) either repair or replace the defective Registered Cabling Service Provider product at the supplier's cost.

The supplier will pay an installer for the cost of labor to repair or replace any such defective product on behalf of the supplier, provided, that such repair or replacement and associated labor costs receive the

prior written approval of the supplier. If the supplier chooses to repair products, the supplier may use new or reconditioned replacement parts. If the supplier chooses to replace products, the supplier may replace such products with new products of the same or similar design. Any such repair or replacement will be warranted for the remainder of the original twenty-year warranty period.

B.38.7.B Application

B.38.7.B.1 The Application covers the Registered Cabling Service Provider compliant channels to support operations of the application(s) that the system was designed to support, as well as additional application(s) defined below. The supplier warrants that the Registered Cabling Service Provider will be free from defects that prevent operation of the specific application(s) for which the Registered Cabling Service Provider was initially designed as long as the design is in compliance with the Cabling Service Provider Performance Specifications for said applications and is in compliance with all other terms and conditions of this warranty. The Application also covers the following additional applications:

B.38.7.B.2 Those as specified in the current (at the time of installation) Supplier Cabling Service Provider Performance Specifications and Addendums; and in accordance with application standards specifications, any application introduced in the future by recognized standards or user forums that use the relevant ANSI/TIA- 568-C series or ISO/IEC 11801 2nd edition (September 2002) components and link/channel specifications for cabling, to the extent that such applications are defined to E-rate over the guaranteed channel performance and/or the installed channel topologies.

B.38.8 Term of Warranty

Twenty years from the date of issuance of the registration certificate or installation, whichever is earlier. Moves, additions, or changes are covered by the original registration certificate if performed by an approved installer in compliance with the supplier's Cabling Service Provider design, installation and registration requirements. Administration of cords by the end user is covered by the original registration certificate if performed in compliance with supplier's Cabling Service Provider guidelines.

B.38.9 Person/Entity Covered

This warranty is for the sole benefit of the person or entity to whom the supplier's registration certificate is issued and any successor in interest to the site in which such Registered Cabling Service Provider was originally installed.

B.38.10 Warranty and Serviceability Requirements

The Bidder Cabling Service Provider submitting a proposal must provide a that they will warranty all work for one (1) year including parts and labor. Additionally, Bidder Cabling Service Provider must provide documentation proving all statement network cabling projects for the brand of product they are submitting are guaranteed with a twenty (20) year manufacturer's warranty.

The Bidder Cabling service provider must include a 20-year full channel solution manufacturer's warranty on all new installations. In the event that a warranty or non-warranty repair is needed, the successful Cabling Service Provider must provide a service phone number and be available for 24-hour service support.

B.38.10.A Same day as service request on a downed system

B.38.10.B Responsibility of Service Provider
Cabling Service Provider shall be responsible to adequately respond with service support within Twenty-four hours after service is requested.

The Cabling Service Provider shall be responsible for damage to any surfaces or work disrupted as a result of his work. Repair of surfaces, including painting, shall be included as necessary. The Cabling Service Provider shall demonstrate the ability to repair and provide adequate installation and maintenance for cabling and wiring of all the specialized systems mentioned within the total contents of this RFP. Cabling Service Provider is fully responsible for any and all damages resulting from their installations, of new network cabling, electrical wiring, fiber optic cabling, maintenance repairs and E-rate services.

Cabling Service Provider responsible for the damages must re-install, test and ensure activation of all cabling and or electrical wiring that was affected by their installations or maintenance services. The service provider responsible for damages must either replace or provide funding for any equipment that was damaged during their installations or maintenance services.

- B.38.11** **Addition and Changes, Per-Hour Labor and Site Visit Charge**
During the period of this contract, the SCBE will require cable maintenance or moves on previously installed cable. Cabling Service Provider s should quote the per-hour labor charge on this type of service and minimum charge for a site visit if applicable.
- B.38.12** **Service Out of Business Hours, Per-Hour Labor and Site Visit Charge**
The Shelby County Board of Education views Police and Fire installations as 24-hours-a-day, 7-days-a-week operations. Cabling Service Provider s must quote a per-hour labor charge for service outside of normal work hours, as well as a minimum charge per site visit if applicable.
- B.38.13** **Claims for Extra Work**
No claims for extra work will be allowed unless the same shall have been previously ordered by the SCBE in writing. Extra charges unless agreed by the parties in writing, charges in excess of the amounts agreed upon in the final contract shall not be allowed.
- B.38.14** **Competitive Pricing**
The Shelby County Board of Education expects to receive the lowest prices the Cabling Service Provider is charging other organizations purchasing similar quantities of cabling installation, service, and support. The SCBE reserves the right to terminate the contract if, in the Shelby County Board of Education's opinion, prices are deemed to be out of line with the general marketplace.
- B.38.15** **Price Proposal**
The following will be required for the price proposal:
- B.38.15.A** **All Prices Disclosed**
All prices must be detailed in the proposal; no additional charges (e.g., transportation, container packing, installation, training, out-of pocket expenses, etc.) will be allowed unless so specified in the proposal. All components necessary to meet requirements must be included in the base cost, with all extra cost options specifically stated in a separate section.
- B.38.15.B** **Full Maintenance Pricing**
Maintenance service prices quoted will include all diagnosis, parts, materials and labor (exclusive of replacing lost or stolen items), preventive/remedial services, and engineering modifications and their documentation.
- B.38.15.C** **Unit Pricing Coverage**
The Selected Cabling Service Provider 's unit pricing must cover all design work and that no additional fees will be accepted. Furthermore, the Selected Cabling Service

Provider 's unit will cover all aspect of SCBE projects, whether network cabling, maintenance of network cabling, fiber optical or electrical wiring.

B.38.16 **Proposals**

B.38.16.A All proposals should be a unit price bid to complete the given job. SCBE will not accept "time and material" type bids. During the course of the installation if both parties agree an item(s) was overlooked in the original RFP, an additional PO or an addendum to the original Purchase Order (PO) will have to be issued to cover the additional item(s).

B.38.16.B SCBE considers the job completed when all cable runs and electrical work meet or exceed testing/certification specifications outlined in this document, test results are received, and the punch list is satisfied.

B.38.16.C Proposals should not include data networking or telecommunications equipment such as hubs, switches, or routers unless specifically requested.

B.38.17 **Estimates of Individual Projects**

The selected Provider(s) will provide estimates for various individual projects to the Shelby County Board of Education at no charge. The SCBE has the right to accept or reject the estimate for a particular project. That project can be offered to the another successful Bidder Cabling Service Provider who meets the qualifications set forth in the RFP. The final decision to choose a Cabling Service Provider for any individual project is upon the discretion on the SCBE. Any Bidder or Cabling Service Provider bidding on the RFP must be certified for a full channel solution product.

PART IV: EVALUATION AND SELECTION PROCEDURE

1.0 EVALUATION COMMITTEE

- A. Evaluation of the proposals will be performed by a committee established for that purpose and will be based on the criteria set forth below. The contract resulting from this RFP will be awarded to the Offeror whose proposal is the most advantageous to SCBE, considering price and technical factors set forth herein.
- B. The Evaluation Committee will make the final determination about acceptability of proposals.

2.0 EVALUATION PROCESS

- A. The committee will evaluate each technical proposal using the evaluation criteria set forth below. As part of this evaluation, the Committee may hold discussions with all qualified Offerors. Discussions may be conducted via teleconference or may take the form of questions to be answered by the Offerors and conducted by mail, E-mail, or facsimile transmission at the discretion of SCBE. During the evaluation process, the committee may request technical assistance from any source.
- B. Following the completion of the technical evaluation of all Offerors' technical proposals, including any discussions, the committee will rank each qualified Offeror's technical proposal.
- C. The cost proposal of each qualified proposal will be distributed to the Evaluation Committee following the completion of the technical evaluation. The cost proposals will not be

distributed to the committee until the technical evaluation is completed. The Committee will determine total costs of the proposals in order to establish a financial ranking of the proposals from lowest to highest.

- D. The Evaluation Committee may reject in whole or in part any and all proposals, waive minor irregularities, and conduct discussions with all responsible Offerors in any manner deemed necessary to serve the best interests of SCBE.
- E. Offerors may be asked to make an oral presentation to the Evaluation Committee. The purpose of the oral presentation is to provide an opportunity for the Offeror to clarify its proposal submission and substantiate proposal representation. The oral presentation is a part of the technical evaluation.
- F. If it is determined to be in the best interest of SCBE, SCBE may invite Offerors to make final revisions to their technical and/or financial proposals through submission of a Best and Final Offer.
- G. The Committee will recommend the Offeror whose overall proposal provides the most advantageous offer to SCBE considering both price and technical factors set forth in this RFP.

3.0 EVALUATION CRITERIA

The Evaluation committee will evaluate the technical proposals using the following criteria below. The committee shall determine which proposals have the basic requirements of the RFP and shall have the authority to determine whether any deviation from the requirements of the RFP is substantial in nature. The committee may reject in whole or in part any and all proposals and waive minor irregularities.

Evaluation Criteria

SCBE will assume that all Proposals are complete as received. The primary objective of this document and any subsequent contract is to obtain the lowest and best cost for the SCBE, consistent with required highest standards for product, service quality and workmanship.

According to E-rate stipulation and rules the eligible cost of E-rate installations will be most heavily weighted factor of the evaluation criteria. Vendor evaluation, and the SCBE' subsequent decision on awarding all or part of the contract, will include, but will not be limited to, the following criteria categories/subjects:

A. COMPANY VIABILITY (Weight of Score is 30%)

Experience in Low Voltage Projects

Cabling Service Provider submitting a proposal must provide documentation showing proof of operating a business with a minimum of 5 years' experience of installation and maintenance in the field of low-voltage, network, fiber optic cabling, .and has **experience with E-rate cabling projects.**

Annual Report or Volume of Sales

The Cabling Service Provider submitting a proposal must disclose the volume or dollar amount of business sales the Bidder has had in each of the past two fiscal years, the most recent annual report of current audited financials.

Customer References in Projects

The Cabling Service Provider submitting a proposal must provide (5) five references that are able to confirm successful support from the Bidder. Two (2) or more of the references shall be for a contract similar or larger to the size listed in this RFP and also provide references pertaining to E-rate projects. It is preferred that the references are within 300 miles of Memphis, TN including at least five (5) reference other non SCBE clients. For each reference, the business name, the identification of a contact person, the title of the contact person and a telephone number.

Workforce or Staffing with Project Experience

Submit the number of Cabling Service Provider employees: nationally, and locally. Information must include the total number of employees in Shelby County; in particular, the number of technical and support staff presently supporting similar services, their qualifications and length of service, titles and their experience in E-rate cabling.

Business Design

A description of the business design of the Bidder, including the number of locations of facilities overall business plan or strategy. The Bidder shall articulate how the company's business design is conducive to supporting this RFP.

Dunn and Bradstreet

The Cabling Service Provider submitting a proposal must provide proof of Bidder Dunn and Bradstreet rating and number and any information toward the same.

Pending Litigations

The Cabling Service Provider submitting a proposal must provide documents and information concerning of any pending litigations or submit a document stating that it is free and clear from the same.

B. PRODUCT ACCREDITATION AND SERVICEABILITY (Weight of score is 30%)

Product and Staff Certifications

The Cabling Service provider submitting a proposal must provide detailed documentation proof of current and continual certification by the "CommScope Systimax Solution, Panduit Full Channel Solution product manufacturing company or Equivalent Approved solution product presented by the Cabling Service Provider which can be proven equal as such end to end full channel network in all aspects of design, installation, and testing of the products described herein.

Warranty Coverage

The Cabling Service Provider submitting a proposal shall provide detail documentation to **warranty of all work for one (1) year, including parts and labor**. The Cabling Service provider shall also submit proof of twenty (20) year warranty of the "full" channel solution for the designated product presented in their proposal.

SCBE also reserves the right to choose a successful Bidder to provide services for cabling maintenance repairs and warranty issues for the existing CommScope Systimax and Panduit Cabling networks in accordance with the specifications enclosed herewith. SCBE reserves the right to award a contract for these services to one or multiple service providers based on SCBE policy, regulations and requirements.

Business Licenses

information of any and all licenses and certifications locally and nationally pertaining to the “services” required in this document such as: BICSI certifications, Electrical Licenses, low voltage Installer licenses, State Licenses, Business Licenses, BBB memberships, etc. Give the names, titles and information concerning persons on staff approved by the authorities for holding various licenses, cable installers, etc.

Product Installation Capabilities

Each bidder or Cabling Service Provider **must list and describe** their company’s ability and commitment to meet the following requirements:

- Provide services and materials necessary for the appropriate installation of network cabling.
- Provider is responsible for providing free consultation and estimates for any requested SCBE network cabling / low voltage project.
- Provide Cabling Service Provider service and materials for electrical wiring.
- Commitment to holding unit pricing submitted for the full amount of years during contract.

Specialty Credentials - (RCDD)

Provide adequate documentation proving an employee that is a full time certified BICSI Registered Communications Distribution Designer RCDD with in Shelby county who are qualified staff for service out of normal business hours and who are qualified to provide technical support for equipment and services purchased under a contract. SCBE prefers that a Cabling Service Provider has 2 employees with this certification however one is mandatory. Bidder shall present documentation proving that it has an employee that is a full time certified BICSI Certified Installers within Shelby County.

Specialty Credentials (Master Electrician)

Provide documentation of proof showing full time Master Electrician licensed in the State of Tennessee on staff with the ability to assist with site surveys consultations etc. and adequate number of licensed electricians in order to make electrical installations. The RCDD and the Master Electrician of the selected Cabling Service Provider shall be required to make site survey visits to assist with design, engineering, evaluations, resulting in cost estimates before projects are by NCE Project managers and budget control managers at no charge to SCBE.

Range of Services Offered

Provide a description of the services offered, both low-voltage cabling and electrical. Low-voltage cabling such as Security, intercom and fire alarm cabling and electrical wiring such as circuit feeds and extensions and installations of panels and transformers. Bidder shall provide a full detailed description listing these services offered by the company.

C. PRICING (General Estimate for Typical Installations) (Weight of Score is 35%)

Pricing Cost for E-rate Eligible Work (Weight of Score is 35%)

Provide the Shelby County Board of Education (NCE) with complete pricing of basic network E-rate cabling scenarios listed in SECTION D of this RFP. Please note that the estimates for E-rate cabling scenarios will be evaluated separately than those of Non-E-rate scenarios. Cost for the work pertaining to this RFP will be fixed price bids for the term of the contract.

Total contract estimate amounts for E-rate service must include travel and related expenses, as well as reflect all services and deliverables described within this proposal, which can be revised should Shelby County Schools Board of Education (“SCBE”) decide not to move forward with specific deliverables.

Pricing Cost for Non-E-rate work (Weight of Score is 5%) Provide the Shelby County Board of Education (NCE) with complete pricing of basic network Non-E-rate cabling and associated electrical wiring scenarios listed in SECTION D of this RFP. Please note that the estimates for E-rate cabling scenarios will be evaluated separately than those of Non- scenarios. Cost for the work pertaining to this RFP will be fixed price bids for the term of the contract.

Total contract estimate amounts for Non E-rate services must include travel and related expenses, as well as reflect all services and deliverables described within this proposal, which can be revised should Shelby County Schools Board of Education (“SCBE”) decide not to move forward with specific deliverables.

EVALUATION TABLE Bidder (s)	Major
	Weights
Company Viability	30%
Product Accreditation and Serviceability	30%
Pricing (Overall Cost for Service)	35%
Cost for E-rate Eligible Work	
Cost for Non-E-rate Work	
Financial Stability and References	5%
Total	100%

4.0 Oral Presentation

SCBE reserves the right to interview, or require an oral presentation from, any bidder for clarification of information set forth in the Bidder’s Proposal. In this regard, at the discretion of the evaluation committee, some or all Bidders who submit a Proposal in response to this RFP may be asked submit to an interview or give an oral presentation of their respective Proposals to the evaluation committee. If so, this is not to be a presentation restating the Proposal, but rather an in-depth analysis of certain qualifications of the Bidder. The interview or oral presentation, if utilized, is intended to provide an opportunity for the Bidder to clarify or elaborate on its qualifications without restating the Proposal. The interview or oral presentation is to be a fact finding and explanation session only and is not to be used to negotiate any terms of contract. If required, the time and location of such interview or oral presentation will be scheduled by the Procurement Director of SCBE. Interviews and oral

presentations are strictly an option of SCBE or its evaluation committee and, consequently, may or may not be conducted. All travel expenses to and from the interview or oral presentation shall be the responsibility of the Bidders.

5.0 Qualifications of the Bidders

SCBE may make such reasonable investigations as deemed proper and necessary to determine the ability of the Bidder to provide the Services. The Bidder shall furnish to SCBE all such information and data as may be requested for this purpose. SCBE further reserves the right to reject any Proposal if the evidence submitted by, or investigation of, the Bidder fails to satisfy SCBE that the Bidder is properly qualified to carry out the obligations required in this RFP, the final contract and to provide the Services contemplated therein.

PART V: APPENDICES

APPENDIX A - SPECIAL TERMS AND CONDITIONS FOR RFP'S

These Terms and Conditions shall apply unless otherwise noted in General Terms and Conditions attached to individual bid request. It shall be the Contractor's sole responsibility to insure they are compliant with all applicable federal, state, and city laws, rules, ordinances, statutes, etc., that may impact this contract. SCBE shall bear no responsibility for monitoring the Contractor's compliance with said legal requirements. If the Contractor fails to maintain legal compliance, SCBE may find said Contractor in default.

1. REQUEST FOR PROPOSALS (RFP)

- a. DIRECTIONS: SCBE invites all interested and qualified vendors to submit proposals to this RFP in accordance with directions specified in the attached General Terms and Conditions and these Special Terms and Conditions.
- b. DEFINITIONS: For the purpose and clarity of this document only, "SCBE" will mean The Shelby County Schools. Also, for the purpose and clarity of this document, "Vendor" will mean any reliable and interested broker, vendor, supplier, contractor, and/or manufacturer that want to respond to this RFP.

2. GENERAL REQUIREMENTS

- a. AUTHORIZED DEALERS: Only authorized dealers may submit a proposal on requested equipment. At the discretion of SCBE, a certificate, executed by the manufacturer, may be requested stating that the Vendor is an authorized agent of the manufacturer and is duly authorized to service and maintain the equipment.
- b. INSPECTIONS: SCBE reserves the right to have inspectors on the premises of the manufacturer during the process of manufacture of any products being furnished under this RFP for as long as may be considered necessary by SCBE. All expenses of the inspectors shall be borne by SCBE. The presence of the inspectors at the site of manufacture of the products shall not relieve the Awarded Vendor of responsibility for faulty workmanship of materials that may be discovered at any time after delivery and prior to final acceptance in accordance with the specifications. In case of factory inspection of items being manufactured for SCBE, every facility shall be afforded inspectors by the manufacturers for the pursuance of their work.
- c. TYPES OF PURCHASES: These specifications are intended to cover the various types of purchases of equipment, materials, supplies, or services as shown to any or to each of the various public and charter schools, offices, or to any designated warehouse or warehouses in Shelby County.
- d. SINGLE PRICE: Unless otherwise specified in the General Terms and Conditions attached to this RFP, the Vendor will not be allowed to offer more than one price on each item even though the vendor may feel that it has two or more types or styles that will meet specifications. Vendor must determine which to offer. If said Vendor should submit more than one price on any item, all prices for that item will be rejected.
- e. AGGREGATE BIDS: Where provision is made on the proposal form for bidding items on an individual, group or aggregate basis, the award will be made on whichever basis is in the best interest of SCBE. When an aggregate bid is requested, the unit prices for each item shall be identified in the response. The unit prices in an aggregate bid should be consistent with the

total quoted price for an aggregate bid. No bid or a combination of items will be permitted except as noted in the General Terms and Conditions.

- f. **MINIMUM REQUIREMENTS:** Whenever mention is made of any article, material, or workmanship to be in accordance with laws, ordinances, building codes, underwriter's code, A.S.M.E. regulations, or similar expressions, the requirements of these laws, ordinances, etc., shall be construed as to the minimum requirements of these specifications. In case of any apparent conflict between the specifications and such laws, ordinances, etc., the Awarded Vendor shall call said conflict to the attention of SCBE Director of Purchasing & Supply Services for a decision before proceeding with any work.
- g. **USE OF BRAND NAMES:** Brand names and model numbers are offered as a reference for Vendors as to the style, size, weight, and other characteristics of the item(s) in the specifications. The use of such brand names should not be interpreted to be the exclusive brand desired unless so stated. The determination of the acceptability and/or the criteria for acceptability of an alternate is solely the responsibility of SCBE.
- h. **PRODUCT OFFERED BY THE VENDOR:** The product offered by the Vendor shall be new, not used, and the latest version of the product. Should a product be discontinued and/or upgraded during the course of the contract, the Vendor shall offer to SCBE a new alternate product that meets and/or exceeds the established specifications, under the same terms, conditions, and prices as the originally offered item.
- i. **COMPLIANCE WITH SPECIFICATIONS:** The Vendor shall abide by and comply with the true intent of the specifications and not take advantage of any unintentional error or omission, but shall fully complete every part as the true intent and meaning of the drawings and specifications, as decided by the Procurement Director. Where the requirements of the specifications call for higher grade and are not in conflict with the laws, ordinances, etc., the specifications shall govern. Where the requirements of the laws, ordinances, etc., are mandatory, they shall govern. The successful Vendor, after award and before manufacture and/or shipment, may be required to submit working drawings or detailed descriptive data identified as acceptable to SCBE, which would provide sufficient data to enable SCBE to judge the Vendor's compliance with the specifications.
- j. **DEVIATIONS TO SPECIFICATIONS:** Any deviation from the specifications must be noted in detail by the Vendor, in writing, as an attachment to the response. The absence of a written list of specification deviations attached to the response will hold the Vendor strictly accountable to SCBE to the specification as written. Any deviation by the Awarded Vendor from the specifications, without prior documented approval, will be grounds for rejection of the goods and/or equipment when delivered.
- k. **Piggy Back Clause:** Shelby County Board of Education reserves the right to extend the terms, conditions, and prices of this contract to other Institutions (such as State, Local and/or Public Agencies) who express an interest in participating in any contract that results from this RFP. Each of the piggyback institutions will issue their own purchasing documents for purchasing of the goods. Proposer agrees that the Shelby County Board of Education shall bear no responsibility or liability for any agreements between Proposer and the other Institution(s) who desire to exercise this option.

Each participating jurisdiction or agency shall enter into its own contract with the Awarded Bidder(s) and this contract shall be binding only upon the principals signing such an agreement. Invoices shall be submitted in duplicate "directly" to the ordering jurisdiction for each unit purchased. Disputes over the execution of any contract shall be the responsibility

of the participating jurisdiction or agency that entered into that contract. Disputes must be resolved solely between the participating agency and the Awarded Bidder. SCBE does not assume any responsibility other than to obtain pricing for the specifications provided.

3. CONFLICT OF INTEREST

- i. In accordance with policy 1013 Superintendent Code of Ethics SCBE has promulgated Ethics Policies, which cover conflict of interest, financial disclosure and lobbying. All bidders are expected to comply with any and all SCBE Ethics Policies that may apply to them individually or as a business entity.
- ii. All bidders should review carefully the conflict of interest policies. Specific attention should be accorded to SCBE Ethics Policies (SCBE Policy 1013) prohibiting SCBE employees from benefiting from business with the school system.
- iii. All bidders are placed on notice that all questions/interpretations concerning SCBE Ethics Policies may be submitted to the Ethics Review Panel in accordance with SCBE Policy 1013.

4. PRICES

- a. **UNIT PRICES:** Unit Prices must be rounded off to no more than two (2) decimal places, unless so specified in the General Terms and Conditions included with the RFP. All unit prices on items shall be completed on the proposal sheet(s). A NO BID notation must be completed for each item not being bid. In case of error in extension of prices in the proposal response, the unit price shall govern.
- b. **UNITS OF MEASURE:** Wherever SCBE indicates the unit of measure required and the Vendor's price is based on a different unit of measure, it shall be at the sole discretion of SCBE to determine whether the Vendor's price will be recalculated. SCBE will not accept any proposals with Vendor escalator clauses, unbalanced figures, or irregular features.
- c. **DELIVERY CHARGES:** All prices shall include be FOB Destination.
- d. **CASH DISCOUNTS:** Cash discounts will not be taken into consideration in determining a contract award. All discounts, other than prompt payment, are to be included in the bid price.
- e. **PRICE REDUCTIONS:** SCBE reserves the right to accept price reductions from the Awarded Vendor during the term of this contract to occur no less than thirty (30) days from the approval of the contract.
- f. **TAXES:** Tax Exemption. SCBE is a tax-exempt entity and, as such, is exempt from the payment of taxes, including but not limited to sales and use taxes, federal excise taxes and federal high use taxes.

5. ITEM DELIVERY

GENERAL DELIVERY REQUIREMENTS: All materials, supplies, and equipment for SCBE shall be delivered F.O.B. Destination. All deliveries must be inside the building. Delivery hours shall be Monday through Friday with the exception of holidays, to offices - between **8:30 a.m. and 3:30 p.m.**; to schools – between **9:00 a.m. and 2:30 p.m.** The Awarded Vendor(s) shall be held responsible

for clean-up and removal of all packing cartons, boxes, crates, packing materials, etc., from the premises after delivery and set up of any furniture and equipment. Drivers must be bonded, have a clean driving record and have the appropriate training to handle hazardous items. Vendor will have the ability (including all applicable permits and licenses) to handle all types of shipments ranging from letters to multi-carton shipments, including bulky and fragile items. Delivery must include a current MSDS for each hazardous chemical or chemical compound delivered or used by the Vendor at a SCBE worksite. The Awarded Vendor shall be liable for the full replacement value of any delivery item lost or damaged.

- a. **SPECIAL DELIVERY INSTRUCTIONS:** Special Instructions for delivery dates, delivery of heavy equipment, materials or machinery requiring special handling, to schools/sites under construction and/or renovation, or refrigerated goods will be defined in General Terms and Conditions.
- b. **PACKING:** All materials must be securely packed in accordance with accepted trade practices. SCBE Purchase Order number must be plainly visible on the exterior of each container. A packing slip and/or delivery ticket shall be included in each shipment. This ticket shall contain the following information: Purchase Order Number, Vendor Name, Name of the Article, Item Number, Quantity, and Delivery Location (Example: ABC Elementary School Library) and Bid/Contract Number. Failure to comply with this condition may be considered sufficient reason to refuse to accept the goods.
- c. **SAFETY REQUIREMENTS:** The Awarded Vendor shall provide all equipment and machinery furnished and delivered to SCBE complying with the Safety regulations as required by OSHA and the Maryland State Safety Health Act known as MOSHA. The Vendor shall sign the safety section, if attached in the proposal response, certifying that the regulations for the type of equipment furnished shall meet all regulations applying to this type equipment meeting the CFR-1910 MOSHA Standard. The Vendor shall submit Material Safety Data Sheets (MSDS) for all items awarded to that vendor provided under the terms of this proposal in accordance with OSHA Communication Standard 29 CFR 1910.101, 29 CFR 1910.1200 and 29 CFR 1926.58 or any other applicable state, federal, or local regulation. Prior to delivery of the items awarded, the vendor must submit MSDS sheets to: SCBE Facilities Safety Officer, 1364 Farmville, Memphis, TN, 38122.
- d. **LIQUIDATED DAMAGES:** In the event the Awarded Bidder fails to deliver the goods or services of the contract in accordance with the specifications, SCBE reserves the right to purchase the goods/services on the open market in sufficient quantities to assure the continued operation of SCBE. All additional expenses incurred by SCBE as a result of such purchases will be deducted from the monies owed or monies that may become due the Vendor.

5. GUARANTEE AND WARRANTIES

- a. **GENERAL REQUIREMENTS:** Payment shall be based upon acceptance of goods or services by SCBE. Vendor expressly warrants that: (a). The merchandise to be furnished and services performed will be free from defects in material and workmanship and will be in full conformity with the specifications, drawings, representation, or sample; that this warranty shall survive acceptance and payment of the merchandise; and that the Vendor will bear the cost of inspection of all goods and services rejected. (b). The Vendor hereby provides a warranty of authorization as to all goods and services. (c). The goods or services furnished must be or have been mined, manufactured, or produced in full compliance with at least the minimum conditions required under the Fair Labor Standards Act of 1938, as amended, and

all other applicable local state and federal laws, rules, and regulations to include Department of Transportation (DOT), Food and Drug Administration (FDA) regulations, and the Equal Opportunity Clause contained in Executive Order 11246, as amended. If applicable to the goods or services purchased herein, vendor must also be in full compliance with the Workplace Hazardous Materials Information System (WHMIS) legislation and maintain a written Hazard Communication Plan.

- b. Awarded Vendor, its employees, agents, volunteers, and contractors who may have contact with students must be in compliance with Title 5, Subtitle 5, Part VI, of the Family Law Article of the Maryland Code. All costs thereof shall be borne by the Vendor.
- c. **GUARANTEE PERIOD:** The Vendor shall unconditionally guarantee all services, materials, and workmanship of all furniture, goods, and equipment furnished by it for a period of one year from the date of acceptance, i.e., delivery and installation, unless a longer period of warranty is specified in the General Terms and Conditions attached to the RFP.
- d. **OFFICE EQUIPMENT:** Vendor agrees to provide on-site service of equipment within eight (8) hours of notification by school system personnel. Loaner equipment shall be supplied; free of charge, during the warranty period if the office equipment cannot be repaired within three (3) working days.
- e. **OTHER EQUIPMENT:** Certain pieces of equipment, machinery, and refrigeration will require guarantees other than detailed above. Refer to General Terms and Conditions for requirements on specific equipment.
- f. **MANUFACTURER'S AGENT:** The Vendor shall act as the manufacturer's agent for all warranty claims.

6. BONDING

- a. **BID BONDS:** Bid Bonds are required. Refer to General Terms and Conditions.

7. PROPOSAL SUBMISSION

- a. **KNOWLEDGE OF TERMS AND CONDITIONS:** Vendors or their authorized representatives are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting a proposal response. Failure to do so will be at the Vendor's own risk and Vendor cannot secure relief on the plea of error. Neither law nor regulations make allowance for errors of omission or commission on the part of Vendors.
- b. **SUBMISSION:** Proposals must be delivered to the Purchasing Office, 13300 Old Marlboro Pike Room 20, Upper Marlboro, Maryland 20772. Vendors must submit technical and cost proposals as specified in the General Terms and Conditions. Vendors shall retain one (1) copy of the proposal for their files. Proposals must be signed and submitted by an authorized representative of the company. Each Vendor may attach a letter of explanation to the proposal, if so desired (or required), to provide an explanation of any detail(s) in the proposal. This letter may not be used to offer optional or alternative proposals or pricing.
- c. **FORMAT:** Signed proposals must be delivered in sealed, opaque envelopes and clearly marked on the outside with: Name of Vendor, Due Date, RFP Number and Title. SCBE shall not accept any facsimile transmission to agents, representatives or employees as meeting the requirement of the Proposal. A facsimile document shall not be considered a valid response

to the RFP.

- d. **VENDOR ADDRESS:** Each proposal must show the full business address, telephone number, email address and fax number of the Vendor and be signed by the person or persons legally authorized to sign contracts. All correspondence concerning the proposal and contract, including Notice of Award, copy of Contract, and Purchase Order, will be mailed or emailed to the address shown on the proposal in the absence of written instructions from the Vendor to the contrary.
- e. **PARTNERSHIPS:** Proposals by partnerships must be signed with the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing, who shall also state the names of the individuals composing the partnership.
- f. **CORPORATIONS:** Proposals by corporations must be signed with the name of the corporation, followed by the signature and designation of the officer having authority to sign. When requested, satisfactory evidence of authority of the officer signing in behalf of the corporation shall be furnished. Anyone signing the proposal as agent shall file satisfactory evidence of authorization to do so.
- g. **CERTIFICATES AND AFFIDAVITS:** All Vendors shall be required to complete the certificates and/or affidavits that are incorporated into the General Terms and conditions of this RFP. Such documents are required by local, state, or federal funding agencies of SCBE as part of the bidding process. The documents may include: Anti-Bribery Affidavit, Debarment Certificate, Sales Tax Certification, Minority Business Enterprise affidavit, and when applicable, Asbestos Free Certification.
- h. **SAMPLES:** When indicated in the General Terms and Conditions, a properly tagged sample and descriptive data shall be submitted to the address specified no later than the date specified in the Schedule of Events included in the General Terms and Conditions. The tag on the sample shall indicate the item number, the name of the company submitting the sample, and the RFP number. SCBE will not be responsible for any samples not picked up within 30 days of the notification of Vendors to do so. Samples may be retained by SCBE until Vendors are notified to remove them. Vendors agree that SCBE will incur no liability for samples that are damaged, destroyed, lost, or consumed in testing processes. Failure to submit the above information when requested is sufficient grounds for rejection of the proposal.
- i. **SPECIAL SAMPLES WITH CERTIFIED APPROVAL:** Some successful Vendors shall be required to submit two (2) samples of each product awarded with an affidavit stating that the chemical composition of the sample submitted is identical with the composition tested prior to the proposal and all remain unchanged during the period of the contract. This requirement shall be part of the specifications of the product or products requested. Failure to submit the above information when requested is sufficient grounds for rejection of the proposal.
- j. **PROPOSAL PREPARATION FEES:** SCBE will not be responsible for any costs incurred by a Vendor in preparing and submitting a proposal response.
- k. **PROPOSAL EVALUATION** Proposal responses will be evaluated for compliance with detailed specifications. The specifications shall vary with each individual RFP issued, and the award shall be made in accordance with the General Terms and Conditions. Consideration will be given to the quantities, time required for delivery, purpose of the goods/services, competency and responsibility of the Vendor, and the ability of the Vendor to perform satisfactorily.

Evaluation may also be made for other factors, such as serviceability, functional suitability, workmanship, safety in use, and overall product quality, where acceptability may be determined on the basis of professional judgment and educational application. SCBE will consider the Vendor's record and performance of any prior contracts with SCBE, federal departments or agencies, or with other public bodies.

- I. RECOMMENDATION OF AWARD: Recommendation of an award of a contract will be made in accordance with the General Terms and Conditions.

8. PROTEST

RIGHT TO PROTEST: RIGHT TO PROTEST: Prior to the commencement of an action in court concerning the controversy, any actual vendor who claims to be aggrieved in connection with a solicitation, the solicitation process, or a pending award of a contract may protest to the Buyer. Procurement Director shall attempt to resolve informally all protest of award recommendations. Protest shall be submitted in writing within seven (7) days after such claimant knows or should know of the facts giving rise to the protest

1. An aggrieved bidder of standing or offeror may protest to the Buyer a proposed award of a contract for supplies, equipment, services, or maintenance. A bidder of standing is a bidder who would be directly next in line for an award should the protest be supported.
 - a. The protest shall be in writing addressed to the Buyer with a copy to the Procurement Director and shall include the following:
 - The name address and telephone number(s) of the protester.
 - Identification of the solicitation
 - Statement of reasons for the protest
 - Supporting documentation to substantiate the claim
 - The remedy sought
2. The protest must be filed with the Procurement Office within seven (7) calendar days of the recommendation of award or notification to the bidder or offeror that their bid or Bid will be rejected.
3. A vendor who does not file a timely protest before the contract is executed by the Board is deemed to have waived any objection.
4. The Procurement Director shall inform the Chief of Business Operations (CBO) upon receipt of the protest.
5. The Procurement Director shall confer with the general counsel prior to issuance of a decision regarding disputes of contracts or awards.

Appeal of Contract Award Decision

1. The Procurement Director shall issue a decision in writing. Any decision of an award protest may be appealed to the CBO within seven (7) days of issuance of the decision by the Procurement Director

Any decision of an award protest may be appealed to the Board of Education within seven (7) days of issuance of the decision by the Superintendent.

9. CONTRACT TERM

The Vendor shall refer to the General Terms and Conditions attached to the RFP for details regarding the Term of Contract for this solicitation.

10. COMMENCEMENT OF SERVICES

SCBE shall have no obligation to pay for services performed before SCBE approves the contract or after it ends. SCBE shall have no obligation to pay for services in excess of the monetary amount of the award. SCBE shall have no obligation to pay for services before a purchase order is issued.

11. ADDENDA

- a. **INQUIRIES:** No interpretation of the meaning of the specification or other documents will be made to any Supplier orally. To be given consideration, inquiries must be received as outlined in Part II Item 4.0. Unless otherwise specified in the General Terms and conditions, inquiries are to be emailed to the Buyer, "INQUIRY" and the RFP name and number must be noted on the envelope. Alternatively, inquiries may be e-mailed to the Buyer. The subject field of the e-mail must include "INQUIRY" and the Bid name and number.
- b. **ISSUANCE:** Any changes to the RFP specifications will be made through the appropriate addenda. Failure of any Supplier to receive such addenda or interpretation shall not relieve any Supplier from any obligations under this RFP as amended by all addenda. All addenda so issued shall become part of the award.

12. ANNULMENTS AND RESERVATIONS

- a. **RIGHT TO REJECT:** SCBE reserves the right to exercise its statutory option to reject any or all proposals and re-advertise for other proposals. SCBE reserves the right to order the said equipment, materials, supplies or services as described within the specifications, and SCBE also reserves the right not to order any items(s) within the specification.
- b. **WAIVER OF TECHNICAL DEFECTS:** SCBE reserves the right to waive technical defects, if in its judgment the interest of SCBE shall so require.
- c. **CONTRACT RESERVATIONS:** SCBE reserves the right to annul any contract if, in its opinion, there shall be a failure, at any time, to perform faithfully any of its stipulations, or in case of any willful attempt to impose upon SCBE materials, products and/or workmanship inferior to that required by the Vendor, and any action taken in pursuance of this latter stipulation shall not affect or impair any rights or claims of SCBE to damages for the breach of any covenant of the contract by the Vendor(s). Should the Vendor(s) fail to comply with the conditions of this contract or fail to complete the required work within the time stipulated in the contract, except for circumstances beyond its control, including, but not limited to, Acts of God, war, flood, governmental restrictions, or the inability to obtain transportation, SCBE reserves the right to purchase the required articles in the open market or to complete the required work at the expense of the Vendor(s). Should the Vendor be prevented from furnishing any item or items, or from completing the required work included in the contract, by

reason of such failures caused by circumstances beyond its control, including but not limited to Acts of God, war, flood, governmental action, or the inability to obtain transportation, SCBE reserves the right to withdraw such items or required work from the operation of this contract without incurring further liabilities.

- d AUTHORITY TO DEBAR OR SUSPEND The Procurement Director shall have the authority to debar a person or company for cause from consideration for award of contracts.

13. TERMINATION OF CONTRACT

- a TERMINATION FOR NON-APPROPRIATION OF FUNDS: SCBE may terminate this contract, in whole or in part, due to insufficient funding or non-appropriation of funds with written notice to the Vendor. SCBE shall pay for all of the purchases, if any, incurred up to the date of the termination notice.
- b TERMINATION FOR DEFAULT: When the Vendor has not performed or has unsatisfactorily performed the contract, payment shall be withheld at the discretion of SCBE. Failure on the part of a Vendor to fulfill contractual obligations shall be considered just cause for termination of the contract, and the Vendor is not entitled to any costs incurred up to the date of termination. In the event of a default by the vendor, this Contract may be terminated.
- c TERMINATION FOR CONVENIENCE: SCBE has the right to terminate this Agreement at any time, without any liability, upon five (5) days prior written notice to Vendor, provided that Vendor shall be compensated for services rendered prior to the date of termination.
- d Each participating jurisdiction and/or local educational agency (LEA) public school district has the right to withdraw from the terms of the contract without showing cause, by providing thirty (30) calendar days, written notice to the vendor(s). The participating jurisdiction/ LEA shall pay all reasonable costs incurred by the vendor(s) up to the date of termination. The vendor(s) shall not be reimbursed for any anticipatory profits which have not been earned up to the date of termination.

Language to support Termination for Convenience by the vendor(s) shall be so stipulated in the contract document between jurisdiction/ LEA and the vendor(s). Such language, when included, shall take precedence over the language of this specification.

14. GOVERNING LAW & VENUE

- a. The RFP shall be construed in accordance with, and interpreted under, the laws of the State of Tennessee. Any lawsuits arising out of such RFP shall be filed in the Circuit Court of Memphis, Tennessee.

15. CONTRACT TERMS AND CONDITIONS

- a. SUBMISSION OF INVOICES: Supplier agrees to accept the line item price on the purchase order as final payment. All invoices are to be submitted promptly showing Purchase Order number, and name and address of recipient and mailed to SHELBY COUNTY BOARD OF EDUCATION, Accounts Payable Office, Room 160 S. Hollywood, Room 250, Memphis, TN 38112 (unless otherwise noted). **Contractors must receive written authorization from Procurement to redirect invoice submission to another location other than Accounts Payable.**
- b. INCORRECT INVOICES: Incorrect invoices will be returned for correction or paid in

accordance with the purchase order. Each invoice shall identify SCBE Purchase Order Number, line item number and item descriptions or services shall be listed in the same order as on the Proposal and/or Purchase Order.

- c. PARTIAL PAYMENTS: Payment in full will only be made upon final acceptance of items as shown on Purchase Order. Partial payments are permissible.
- d. LATE SUBMISSION OF INVOICES: The parties acknowledge and agree that the Vendor's invoices are to be submitted in a timely manner, per the terms of the purchase order, after the services have been provided or the goods and materials have been provided. If invoices are submitted after one calendar year after the Vendor's services have been rendered or the last date when goods and materials were accepted by SCBE, then SCBE shall have no obligation to pay for the stale invoices.
- e. CONFIDENTIALITY: Vendor acknowledges and agrees to hold all Confidential Information in the strictest confidence as a fiduciary and will not make any press release or public announcement, or voluntarily sell, transfer, publish, disclose, display or otherwise make available to any third persons such Confidential Information or any portion thereof without the express written consent of SCBE. Vendor and its employees, agents, volunteers and contractors shall maintain the confidentiality of all medical, psychological, and student records in compliance with federal and state laws. Additionally, Vendor shall procure from the parent or guardian of each student receiving services hereunder a written consent in favor of Vendor and SCBE for the mutual disclosure of such records by and among the Vendor, SCBE and SCBE' employees, agents, volunteers and contractors.
- f. INDEMNIFICATION: Vendor shall indemnify, defend, and hold harmless the SHELBY COUNTY BOARD OF EDUCATION, Superintendent and their respective elected/appointed officials, employees, departments, agencies, agents and volunteers from any and all claims, demands, suits, and actions, including attorney's fees, litigation expenses and court costs, connected therewith, brought against the SCBE and their respective elected/appointed officials, employees, departments, agencies, agents, and volunteers, arising as a result of direct or indirect, willful, or negligent act or omission of the Offeror or its employees, agents, or volunteers.
- g. INSURANCE:
 1. The contractor must maintain and pay for Comprehensive Business Insurance to protect their claims under the Workers' Compensation Act, from claims or damages because of bodily injury to others, including employees of SCBE, damage to the property of others, including SCBE, claims for damages arising out of the operation of motor vehicles, which may arise during the performance of the contract whether caused by themselves or by any sub-contractor or anyone directly or indirectly employed by either of them, and Product Liability Insurance. Said insurance is to cover the duration of the contract under an express or implied warranty.
 2. The following coverages and limits are required of all vendors:
 - General Liability, including Products Liability & Completed Operations - \$1,000,000 per occurrence/\$2,000,000 aggregate
 - Workers Compensation – Statutory Benefits (Only required if the Contractor will be delivering the product(s) to our building).

- Employers Liability - \$500,000 each accident/\$500,000 injury by disease/\$500,000 injury by disease aggregate (Only required if the Contractor will be delivering the product(s) to our building).
- Auto Liability - \$1,000,000 combined single limit (Only required if the Contractor will be delivering the product(s) to our building).

3. The certificate on this insurance shall be made in favor of the **Shelby County Board of Education, Memphis TN 38112** and indicate paid up coverage for the term of the contract.

4. The certificate of insurance **TO BE SUBMITTED** to the PROCUREMENT OFFICE, 160 S HOLLYWOOD, MEMPHIS, TN 38112.

5. It will be the responsibility of the successful Bidder (s) to ensure that a **current** Certificate of Insurance is on file in the Purchasing Office during the entire period of the contract.

6. The cost of the above insurance shall be considered an overhead or operating expense to the Contractor, similar to rental costs, utilities, automobile liability insurance, and other business related expenses. **The premiums or costs to provide the above insurance shall not be directly related to the cost of the work or services specified in this Request for Proposal.**

- h. **NON-ASSIGNABILITY:** This contract shall not be assigned or services subcontracted in whole or in part without the written consent of SCBE. Any attempt to do so without such written consent shall be null and void of no effect.
- i. **INDEPENDENT VENDOR:** Vendor is furnishing its goods and/or services hereunder as an independent Vendor, and nothing herein shall create any association, partnership or joint venture between the parties hereto or any employer-employee relationship.
- j. **GENERAL RECORDS CLAUSE:** Vendor's contracts, files, accounts, records, and other documents related to this Contract shall be open to examination and/or audit by SCBE and made available by the Vendor to SCBE and/or its designated agents at any time upon reasonable prior notice, during performance under this Contract and for a period of four (4) years after final payment or such longer period of time as required by law or rule or regulations.
- k. **SOLE AGREEMENT:** This Contract constitutes the sole agreement between the parties hereto and no amendment, modification or waiver of any of the terms and conditions hereof shall be valid unless in writing and executed by both parties. Any prior verbal agreements or proposals shall not be considered a part of this Contract.
- l. **PROTECTION OF PROPERTY:** Vendor will use reasonable care to avoid damaging existing buildings, equipment, and property at SCBE sites and all material furnished by SCBE ("Property"). If the Vendor's failure to use reasonable care causes damage to any property, Vendor must replace or repair the damage at no expense to SCBE as directed by the Contracting Officer. If the Vendor fails or refuses to make such repair or replacement, the Vendor will be liable for the cost, which may be deducted from payments due Vendor.
- m. **PUBLIC STATEMENTS:** Vendor shall not use or reference the Name or Emblem of SCBE in issuing any press releases or otherwise making any public statement with respect to this Contract (unless such press release or statement is required by applicable law regulation or the requirements of any listing agreement with any applicable stock exchange) without the

prior written consent of SCBE, which consent will not be unreasonably withheld. Purchase by SCBE of any articles, material, merchandise, or service does not imply that SCBE has either adopted or endorsed the product of service, and the use by any manufacturer, Vendor, merchant or other person of the name or emblem of SCBE in any advertisement that they are furnishing products or services is not authorized. The unauthorized use of the name or emblem of SCBE is prohibited by the United States Criminal Code - Section 706.

- n. Conditions and Assumptions. All Proposals and related documents submitted shall be based on the same conditions and assumptions that will underlie any prospective final contract between SCBE and the successful Bidder. Thus, in establishing the terms of any resulting contract, SCBE may assume the conditions and assumptions underlying the Proposal submitted by the successful Bidder are accurate.
- o. Prohibited Contact. Registered and non-registered lobbying of SCBE staff members or Board members with respect to a pending project or award is prohibited during the time period between the date the RFP is advertised and the date a final contract is awarded. ANY CONTACT BETWEEN SCBE STAFF MEMBERS OR BOARD MEMBERS AND ANY REPRESENTATIVE OF A RESPONDENT RELATING TO A PENDING PROJECT OR AWARD (WHETHER BY WRITING, TELEPHONE, E-MAIL OR OTHERWISE) OUTSIDE OF PROPERLY SCHEDULED MEETINGS, OTHER THAN AS INTENDED AND INITIATED BY AN SCBE STAFF MEMBER, SHALL BE GROUNDS FOR DISQUALIFICATION OF THE Bidder FROM THE PROCESS. By submitting a Proposal, the Bidder represents and warrants that it has not made, and will not make, any contact prohibited by this paragraph.
- p. Mandatory Use of Form and Modification of Terms and Conditions. Failure to submit a Proposal on any official form provided for that purpose may be cause for rejection of a Proposal. Return of the complete form is required. Modification of, or additions to, the general terms and conditions of this RFP may be cause for rejection of the Proposal. Notwithstanding, the SCBE Director of Purchasing reserves the right to decide, on a case by case basis, in his or her sole discretion, whether to reject such a Proposal.
- q. Errors or Omissions. The Bidder shall not be allowed to take advantage of any errors or omissions in the specifications set forth in this RFP. Where errors or omissions occur in this RFP, the Bidder shall promptly notify the contact person listed in this RFP and report the identified error or omission. Inconsistencies in the specifications are to be reported before Proposals are submitted to SCBE.
- r. Liability for Improper Date or Time Processing. By submitting a Proposal, the Bidder agrees that, if it becomes the successful contractor, the bidder will indemnify and hold harmless SCBE and the officers, employees, Board members and agents of SCBE against any claim of, or liability for, breach of any contract related to the Services that is caused directly or indirectly by the failure of computer software or any device containing a computer processor to accurately or properly recognize, calculate, display, sort or otherwise process dates or times.
- s. Audit. Unless the contract is a firm fixed price contract, SCBE shall be entitled to audit the books and records of the successful contractor or any subcontractor thereof to the extent that such books and records relate to the performance of the successful contractor's contract with SCBE. Accordingly, the successful contractor agrees, and any subcontractor thereof will agree, to retain all books, records and other documents relative to this RFP and the related contract for a period of three (3) years from the date of final payment under the contract for the contractor and for a period of three (3) years from the date of final payment under the subcontract for the subcontractor, unless a shorter period is otherwise authorized

in writing the SCBE. By submitting a Proposal, the successful contractor grants to SCBE the right to perform, or have performed by its authorized agents and/or auditors, an audit of the books and records of the successful contractor. Consequently, SCBE will have full access to, and the right to examine, any of said materials following the giving of reasonable notice during said period. BIDDERS ARE HEREBY NOTIFIED THAT ALL RECORDS OF ALL PERSONS CONTRACTING WITH THE SCBE MAY BE SUBJECT TO THE TENNESSEE PUBLIC RECORDS ACT.

- t. Compliance with Procedures. The successful contractor will comply with all procedural instructions that may be issued from time to time by SCBE. However, the substantive terms and conditions of the contract shall not change without the written consent of all parties thereto.
- u. Obligation of Successful Contractor. By submitting a Proposal, the successful contractor covenants and agrees, based upon its own investigation of the conditions to be met, that it fully understands its obligation and that it will not make any claim under, or have any right to cancellation or relief from, the contract because of any misunderstanding or lack of information.
- v. Format of Services; Satisfaction of SCBE. The Bidder agrees that, if it becomes the successful contractor, the Bidder will fully provide to SCBE, to the best of its capabilities, the Services in substantially the format, quality and scope required by, or indicated in, this RFP, including any modifications and additions hereto. Furthermore, the Bidder agrees to be responsible for providing the Services in a manner and to an extent satisfactory to SCBE.

16. CHANGES IN TERMS OR DELIVERY/COMPLETION DATE

After award of individual contracts, any questions or correspondence related but not limited to the following matters must be directed to the PROCUREMENT OFFICE SHELBY COUNTY BOARD OF EDUCATION, MEMPHIS, TENNESSEE, 38112, in writing:

In the event of strikes, Acts of God, or other circumstances beyond the contractors control which prevent completion of service or delivery, the contractor must secure temporary contractual relief. The circumstances and duration must be stated by the contractor in writing and be forwarded to the PROCUREMENT OFFICE within ten (10) days after their development. Contractual relief shall be only that which is acceptable to and in agreement with the PROCUREMENT OFFICE, for those goods and services which are necessary for the day to day needs of SCBE. **Please Note: ALL OVERTIME MUST BE APPROVED IN ADVANCE**

17. Period of Contract Performance

The period of performance for the Services to be provided to the SCBE by the Bidder or Cabling Service Provider as a result of this RFP and any resulting contract or agreement shall be as agreed and negotiated. It is the intent of the SCBE to award a contract, or agreement, for the term, or duration, defined in this RFP. The contract or agreement resulting from this RFP shall also contain a provision granting to the SCBE the right to terminate the Agreement, with or without cause, upon thirty (30) days' notice. Bidders shall provide a sample agreement for review. The SCBE will consider the selected to be the sole point of contact with regard to completion of services and contractual matters, including the performance of warranty services and award. The SCBE will contract with one or more Cabling Service Provider s to install local and wide area network cabling. Although the SCBE prefers to contract with a single Cabling Service Provider for installation, equipment, service,

and maintenance during the term of this contract, the SCBE reserves the right to itemize and award separate contracts for installation, equipment, service, and maintenance.

The SCBE also reserves the right to award contracts to multiple Cabling Service Providers, if necessary, to obtain the desired coverage. The SCBE also reserves the right to solicit individual bids on certain larger projects. The SCBE will consider multiple bids from the same Cabling Service Provider. All questions pertaining to the RFP must be forwarded to the SCBE at the email address listed within the announcement page of this document.

18. Value-Added Services

Should the SCBE require and accept a full services proposal based on cabling and electrical work provided by the Bidder or Cabling Service Provider, all cable and electrical installers shall work in concert with the SCBE's personnel and Network Cabling and Electronic Department. Responders shall provide a functional job description that is comparable with the professional skills requested in this position. After contract award, the Cabling Service Provider shall provide documentation of BICSI certification and or electrical license of Cabling Service Provider personnel who are being proposed for the SCBE cable and electrical projects. The successful Cabling Service Provider's assignment of any representative shall be solely subject to the SCBE's approval. All contract personnel may be subject to security and fitness for duty clearances as deemed necessary by the SCBE personnel.

19. Award of Contract -

SCBE also reserves the right to choose a successful Bidder for E-rate network cabling and fiber optical cabling services in accordance with the (SLD) of the Universal Services Administrative Corporation (USAC) specifications enclosed herein. SCBE may chose a successful Bidder to provide services for maintenance repairs and warranty issues concerning the existing cabling network. One or more successful Bidder may be chosen to fulfill all of the services aforementioned. **Only one vendor can be selected as Cabling contractor representing SCBE as required by the Schools and Library Division (SLD.)**

20. Negotiation and Approval of Contract

Should, at any time, the SCBE determines in its sole discretion that only one bidder is fully qualified or that one Bidder is clearly more qualified than the others under consideration, a proposed contract may be negotiated for award to that successful Bidder. The SCBE shall have no obligation to include in any such proposed contract any part of any sample contract submitted by the Bidder.

21. Contract Approval is Subject to Board Approval and E-rate Funding Availability

The proposed contract must be presented to the board of commissioners of the SCBE (the "Board") for final approval of award. Provision of the Services may not commence until: (i) a contract between the SCBE and the successful Bidder is properly negotiated, executed and entered; (ii) the contract is approved by the Board, as required; and (iii) SCBE issues to the successful Bidder a written notice to proceed.

B.40.35 Owner's Representative

At the time the purchase order is issued, the SCBE, will designate, the name and telephone numbers of its representatives. These will serve as the point of contact between the contractor and the SCBE.

22. Order of Work

The contractor is reminded that during the accomplishment of his work, the facility may be in full operation. The contractor shall develop work schemes that will disturb the educational process as little as possible. Other contractors may be working on the job at the same time. Coordination and cooperation is expected. All damages incurred during the execution of this contract will be the sole responsibility of the contractor.

Prior to commencement of work, a Pre-Construction Conference will be held at the work site to discuss the job requirements. Included in the conference will be the approval of an acceptable sequence of work to be developed by the contractor.

Upon completion of the installation the contractor shall provide a copy of “**as built**” plans, in its entirety, to the owner’s representative within two (2) weeks.

23. Conduct of Work

Work once started shall be diligently carried out toward completion. All work shall be done in a workmanship like manner in accordance with standard practices, local codes and ordinances, applicable statutes and in accordance with manufacturer’s recommendations, where applicable.

24. Hours of Work

Work on these facilities may be conducted between the hours of 7:00 A.M. and 4:00 P.M. Central Time, Monday through Friday, except for recognized SCBE’s holidays. Should the contractor desire to work outside of those hours, a request must be submitted at least 48 hours in advance of the desired work period.

25. Notification of Work

The contractor shall notify the SCBE of the date work will commence at the preconstruction meeting. The contractor shall notify the SCBE when the completed work is ready for final inspection.

26. Job Safety

The contractor is required to perform this work within the precepts of OSHA guidelines for a safe working environment. The contractor shall erect and maintain, as required by conditions and progress of the work, all-reasonable safeguards for safety and protection includes signs, dust barriers, barricades and warnings lights. Conditions, which, in the opinion of the owner’s representative, are unsafe and correctable, shall be immediately corrected. Failure to do so will result in a job stoppage until the situation has been cleared.

27. Worker Identification

The successful Cabling Service Provider or any contractor and his sub-contractor doing work on SCBE property shall provide each of their employees, assigned to this project, with an SCBE Vendor identification badge which must be obtained by SCBE Security Identification Department. The identification badge shall be worn at shirt pocket height, at all times while the contractor’s employees are on the Shelby County Board of Education’s property. There is a cost associated with obtaining these badges and the vendor or contractor shall be solely responsible for paying that cost. The cost of SCBE vendor ID badges cannot be added into the cost of any project. For pricing, please contact the SCBE Office of Security at 901.416.5300.

28. No Smoking Policy

The contractor shall make each of his employees aware of this policy.

29. Tennessee Hazardous Chemical Right-To-Know

The Shelby County Board of Education will provide the successful Bidder, on request, with a list of chemicals that have been identified as being present in the locations involved in his RFP.

30. Federal Laws Applying To This Project

The Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color, national origin or sex.

31. Contractor Supplies Material

Unless otherwise specified in these specifications, the contractor is to supply all materials required to complete the work. All materials are to be new and of top quality.

32. Identification and Location of Existing Underground Utilities and Services

It shall be the responsibility of the contractor to repair at no cost and to the satisfaction of the SCBE all existing underground telephone, cable television, electric, gas, and water services, sewers, storm drains, electrical feeders, grounding rings, branch circuits, control wiring, fire alarms, clocks/bells, etc. in the path of specified and/or planned trenches, poles, pads, and fences damaged while providing services to the SCBE.

33. Asbestos in the school's - Formal Notification. See attachment

Asbestos

The contractor shall avoid disturbing any asbestos or suspected asbestos-containing material. Each location and/or property has an asbestos plan, showing probable asbestos problem locations. The contractor must contact the SCBE for this information. If the contractor encounters asbestos or suspects building materials containing asbestos, that are not shown on the asbestos plans, or if a method of installation to avoid asbestos areas cannot be determined, the contractor shall request guidance from the owner's representative as how to proceed.

34. Demolition

All material demolished and salvaged, unless otherwise directed by the owner's representative, are to become the property of the contractor and will be removed from the site prior to job completion.

35. Protection of Existing Facilities

The contractor will be expected to protect all existing amenities currently incorporated into, or adjacent to, the facility, including shrubbery, sidewalks, etc. Any and all damage to the facility shall be the responsibility of the contractor and shall be restored by him at no additional expense to the owner. Damage to asbestos-containing material is included in this requirement and is to be abated/repared as required by current asbestos regulations. The contractor is advised that current regulations require all work on asbestos-containing materials be accomplished under the direction of the Asbestos Abatement Section. As soon as possible after any such damage occurs, and prior to any abatement or repairs, the owner's representative shall be notified. Costs to repair this damage will be the responsibility of the contractor.

Electrical Licenses, Permits, Fees

The contractor shall be responsible for obtaining all licenses and permits and the payment of required fees. Copies of permits and final inspections approved by the authorities having jurisdiction shall be furnished to the owner's representative at the preconstruction meeting.

B.40.51

Codes, Ordinances, Regulations, and Laws

The contractor shall comply with all local, state, and federal codes, ordinances, regulations and laws applicable to the work to be done, such as codes, ordinance, regulations and laws to be considered as minimum requirements shall be installed in excess thereof. No instructions given in the contract documents shall be construed as an authorization to violate any codes, ordinance, regulation or law.

B.40.52

Availability of Utilities

When the school is open, the contractor may use available electrical power (120V ac) in the operation of his tools. Water and toilet facilities are also available, with the permission of the school's Principal and/or the SBE (Supervisor Building Engineer).

B.40.53

Construction Material

All construction material delivered to these sites shall be subject to inspection by the owner's representative, who shall have the right to examine the supplier's documentation to establish compliance with these specifications.

B.40.54

Construction Equipment

All equipment used at the job site shall be in first-class condition and incorporate all safety appliances required by TOSHA. Adequate means shall be taken to lock, secure or otherwise safeguard the equipment from misuse or vandalism when not in use. Equipment not meeting these requirements will be removed from the job site.

B.40.55

Inspection and Testing

The owner may, at his discretion, engage the services of a testing laboratory to ensure that all materials and workmanship are in accordance with the plans and specification. The testing expense will revert to the contractor should the material or workmanship fail to comply with requirements.

B.40.56

Guarantee

The contractor shall guarantee all work against defects in workmanship and materials for a period of no less than one (1) year. This shall be a written guarantee, submitted on the contractor's letterhead, covering all materials and assuring all replacements to be made at no expense to the owner.

B.40.57

Asbestos-Containing Materials

The contractor shall supply a written statement, on company letterhead, to the owner, stating that no asbestos-containing building materials were used in this work. Final payment will not be processed until this letter is received.

B.40.58

Final Acceptance

Completion shall be subject to a final inspection by the owner's representative. A submittal of "as built plans" is to be received within one (1) week of punch list completion. The evaluation process involves a thorough review of the proposals and selection of a Cabling Service Provider. The selected Cabling Service Provider will have performed well in all areas.

B.41

REFERENCES

- B.41.1** Insulated Cable Engineers Association (ICEA)
- B.41.1.A** ANSI/ICEA S-80-576-2000, *Category 1 & 2 Individually Unshielded Twisted-Pair Indoor Cables for Use in Communications Wiring Systems*, 2002.
- B.41.1.B** ANSI/ICEA S-84-608-2002, *Telecommunications Cable, Filled Polyolefin Insulated Copper Conductor*, 2002.
- B.41.1.C** ANSI/ICEA S-90-661-2002, *Category 3, 5, & 5e Individually Unshielded Twisted-Pair Indoor Cable for Use in General Purpose and LAN Communication Wiring Systems*, 2002.
- B.41.1.D** ICEA S-102-700-2001, *ICEA Standard for Category 6 Individually Unshielded Twisted-Pair Indoor Cables for Use in LAN Communication Wiring Systems Technical Requirements*, 2001.
- B.41.2** International Electrotechnical Commission (IEC)
- B.41.2.A** ISO/IEC 11801 Ed.2:2002, *Information Technology—Generic Cabling for Customer Premises*.
- B.41.2.B** ISO/IEC 14763-1:1999, *Information Technology—Implementation and Operation of Customer Premises Cabling—Part 1: Administration*.
- B.41.2.C** ISO/IEC TR 14763-2:2000, *Information Technology—Implementation and Operation of Customer Premises Cabling—Part 2: Planning and Installation of Copper Cabling*.
- B.41.2.D** ISO/IEC TR 14763-3:2000, *Information Technology—Implementation and Operation of Customer Premises Cabling—Part 3: Acceptance Testing for Optical Cabling*.
- B.41.2.E** ISO/IEC 18010:2002, *Information Technology—Pathways and Spaces for Customer Premises Cabling*. National Fire Protection Association (NFPA)
- B.41.2.F** NFPA 70, *National Electrical Code® (NEC®)*, 2005.
- B.41.2.G** NFPA 70E, *Standard for Electrical Safety Requirements for Employee Workplaces*, 2002.
- B.41.2.H** NFPA 72, *National Fire Alarm Code®*, 2002.
- B.41.2.I** NFPA 75, *Standard for the Protection of Electronic Computer/Data Processing Equipment*, 1999.
- B.41.2.J** NFPA 76, *Recommended Practice for the Fire Protection of Telecommunications Facilities*, 2002.
- B.41.2.K** NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*, 2002.

- B.41.2.L NFPA 101, *Life Safety Code*®, 2003.
- B.41.2.M NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, 2000.
- B.41.2.N NFPA 262, *Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces*, 2002.
- B.41.2.O NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2000.
- B.41.2.P NFPA 5000™, *Building Construction and Safety Code*, 2003.
- B.41.3 Telecommunications Industry Association (TIA)
 - B.41.3.A ANSI X3T9.5, *Requirements for UTP at 100 Mbps*.
 - B.41.3.B ANSI/TIA-568 C.3, *Guidelines for Maintaining Optical Fiber Polarity Through Reverse-Pair Positioning*, 2009.
 - B.41.3.C TIA/EIA TSB-140, *Additional Guidelines for Field-Testing Length, Loss and Polarity of Optical Fiber Cabling Systems* (pending).
 - B.41.3.D ANSI/TIA-568-C.0, "Generic Telecommunications Cabling For Customer Premises", Published 2009.
 - B.41.3.E ANSI/TIA-568-C.1, " Commercial Building Telecommunications Cabling Standard", Published 2009.
 - B.41.3.F ANSI/TIA-568-C.2, " Balanced Twisted-Pair Telecommunication Cabling and Components Standard", Published 2009.
 - B.41.3.G ANSI/TIA-568-C.3, " Optical Fiber Cabling Components Standard", Published 2008, errata issued in October, 2008.
 - B.41.3.H ANSI/TIA-568-C.4, " Broadband Coaxial Cabling and Components Standard, Published 2011.
 - B.41.3.V ANSI J-STD-607-A, *Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications*, 2002.
 - B.41.3.W TIA/EIA758-A, *Customer-owned Outside Plant Telecommunications Infrastructure Standard*, 2005.
- B.41.4 Other Reference Materials
 - B.41.4.A BICSI *Customer-Owned Outside Plant Design Manual (COOSP)*, 3rd edition.
 - B.41.4.B BICSI *Electronic Safety and Security Reference Manual (ESSDRM)*, 1st edition.

- B.41.4.C** **BICSI *Information Transport Systems Installation Manual (ITSIM)*, 4th edition.**
- B.41.4.D** **BICSI *Network Design Reference Manual (NDRM)*, 6th edition.**
- B.41.4.E** **BICSI *Telecommunications Distribution Methods Manual (TDMM)*, 10th edition.**
- B.41.4.F** **BICSI *Wireless Design Reference Manual (WDRM)*, 1st edition.**
- B.41.4.G** **Institute of Electrical and Electronic Engineers (IEEE).**
- B.41.4.H** **National Electrical Manufacturers Association (NEMA).**

B.42 **DEFINITIONS**

- B.42.A** Structured Cabling System (the SCBE): A the SCBE is defined as all required cabling including hardware, termination blocks, cross connect wire or cordage, patch panels, patch cords, telecommunication outlets, work area cords, UTP and fiber optic cable installed and configured to provide computer data and voice connectivity from each data or voice device to the network file server or voice network/switch designated as the service point of the local area network.
- B.42.B** Work Area Subsystem: The connection between the telecommunications outlet and the station equipment in the work area is provided by the Work Area Subsystem. It consists of cords, adapters, and other transmission electronics.
- B.42.C** Horizontal Subsystem: The Horizontal subsystem Provides connections from the horizontal cross connect to the Telecommunication Outlets (TOs) in the work areas. It consists of the horizontal transmission media, the associated connecting hardware terminating this media and TOs in the work area. Each floor of a building is served by its own Horizontal Subsystem.
- B.42.D** Riser Backbone: The Riser Backbone subsystem links the main cross connect (MC) in the equipment room to intermediate cross connects (IC) and horizontal cross connects in the telecommunications rooms (TR). It consists of the backbone transmission media between these locations and the associated connecting hardware terminating this media. It is normally installed in a star topology; with first-level backbone cables beginning at the main cross connect. If needed, second-level backbone cables begin at intermediate cross connects.
- B.42.E** Campus Backbone: A Campus Backbone is used when a distribution system encompasses more than one building. The components and cables that provide the link between buildings constitute the Campus Backbone. This subsystem includes the backbone transmission media, associated connecting hardware terminating this media, and electrical protection devices to mitigate harmful voltages when the media is exposed to lightning and/or power surges. It is normally a first-level backbone cable beginning at the main cross connect in the equipment room of the hub building and extending to the intermediate cross connect in the equipment room of a satellite building.

- B.42.F** Equipment Subsystem: The Equipment Subsystem consists of shared (common) electronic communications equipment in the equipment room, main cross connect or telecommunications room and the transmission media required to terminate this equipment on the distribution hardware.
- B.42.G** The Administration Subsystem: The Administration Subsystem links all of the subsystems together. It consists of labeling hardware for providing circuit identification and patch cords or jumper wire used for creating circuit connections at the cross connects.

B.43 **PRODUCT DATA**

- B.43.A** Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- B.43.B** Submittals shall include all items called for in PART 2 – PRODUCTS of this document and the manufacturer's cut sheets for the following:
- B.43.B.1** All fiber optic and balanced twisted pair cable: to include patch cords, cross connect wire and cross connect cordage.
- B.43.B.2** All connectors and required tooling.
- B.43.B.3** All termination system components for each cable type.
- B.43.B.4** All ER, MC, EF and TR equipment frame types, hardware (and LAN equipment if applicable).
- B.43.B.5** All grounding and surge suppression system components.
- B.43.B.6** All test equipment to be used for fiber and balanced twisted pair channel.
- B.43.B.7** A Performance Specification showing manufacturer's Guaranteed Channel Performance over the full swept frequency range.
- B.43.B.8** Technical data sheets shall include the physical specifications as well as the following electrical and transmission characteristics for balanced twisted pair channels:
- B.43.B.8.a** Mutual Capacitance
- B.43.B.8.b** Characteristic Impedance
- B.43.B.8.c** DC Resistance
- B.43.B.8.d** Insertion Loss (IL)
- B.43.B.8.e** Pair-to-Pair Near End Crosstalk (NEXT)
- B.43.B.8.f** Power Sum Near End Crosstalk (PSNEXT)
- B.43.B.8.g** ELFEXT (ELFEXT)

B.43.B.8.h Power Sum ELFEXT (PSELFEXT)

B.43.B.8.i Return Loss (RL)

B.43.B.8.j Propagation delay

B.43.B.8.k Delay Skew

B.51.1 **Permits and Fees** The chosen Successful Cabling Service Provider must **furnish any/all permits with local and/or state codes** enforcement agencies and the payment of required fees to complete all aspects of any project whether low-voltage cabling or electrical of all work performed. Copies of permits and final inspections approved by the authorities having jurisdiction shall be furnished to the owner's representative at the designed times.

B.51.2 **Response to Service Requests**
SCBE needs immediate response to any structured cabling system and or electrical wiring request. The successful Cabling Service Provider chosen must be committed to provide response to any normal service request from SCBE within 24 hours and any response to any emergency request within 5 hours.

B.54.1 Prior to the commencement of work under the contract, the Cabling Service Provider will execute and provide to SCBE a good and solvent payment and performance bond to the effect that the Contractor will pay for all the labor and materials used by Cabling Service Provider or by any Subcontractor, immediate or remote, in connection with the Contract, in lawful money of the United States, as required by Section 12-4-118 of the Tennessee Code Annotated. The bond shall be for at least twenty-five percent (25%) of the Contract Price. The bond shall provide that the Cabling Service Provider shall promptly make payment when due of all taxes, licenses, assessments, contributions, penalties and interest on the project.

APPENDIX B - ADDENDA ACKNOWLEDGEMENT
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)

RFP-01242018
NETWORK CABLING (CONTRACTOR)

(If applicable) Please complete and return with your bid response.

I the undersigned acknowledge the receipt of the following addenda to this solicitation

Addendum #1- Date Received _____

Addendum #2 - Date Received _____

Addendum #3 - Date Received _____

Addendum #4 - Date Received _____

Signature

Title

Vendor Name

Email

Contact Phone Number

APPENDIX C – REFERENCES
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)

RFP-01242018
NETWORK CABLING (CONTRACTOR)

1.

Client Name:

Address:

Services Provided:

Date(s)of services:

Contact Name & Title:

Phone No:

Email Address:

2.

Client Name:

Address:

Services Provided:

Date(s)of services:

Contact Name & Title:

Phone No:

Email Address:

3.

Client Name:

Address:

Services Provided:

Date(s)of services:

Contact Name & Title:

Phone No: _____

Email Address: _____

4.

Client Name: _____

Address: _____

Services Provided: _____

Date(s)of services: _____

Contact Name & Title: _____

Phone No: _____

Email Address: _____

5.

Client Name: _____

Address: _____

Services Provided: _____

Date(s)of services: _____

Contact Name & Title: _____

Phone No: _____

Email Address: _____

APPENDIX D - NON-COLLUSION CERTIFICATE
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)

RFP-01242018
NETWORK CABLING (CONTRACTOR)

I HEREBY CERTIFY that I am the _____ and the duly authorized
representative of _____
whose address is _____ and

THAT NEITHER I nor, to the best of my knowledge, information, and belief, the above firm nor any of its other representatives I here represent:

- (a) Have agreed, conspired, connived or colluded to produce a deceptive show of competition in the compilation of the RFP or offer being submitted herewith;
- (b) Have in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the RFP price or price proposal of the bidder or offeror herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the Contract for which the within RFP or offer is submitted.

In making this affidavit, I represent that I have personal knowledge of the matters and facts herein stated.

(SIGNATURE)

(DATE)

(PRINTED OR TYPED NAME)

Subscribed and sworn before me this _____ day of _____, 20__.

x _____ Notary Public

My commission expires: _____

APPENDIX E - DEBARMENT AFFIDAVIT
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)

RFP-01242018
NETWORK CABLING (CONTRACTOR)

**Certification Regarding Debarment, Suspension
Ineligibility and Voluntary
Exclusion—Primary and/or Lower Tier Covered Transactions**

- (1) The prospective participant certifies to the best of its knowledge, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
- (2) The prospective participant and its principals have not, within a three (3) year period preceding this proposal, 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) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
- (3) The prospective participant and its principals 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 in Paragraph 2 of this certification.
- (4) The prospective participant and its principals have not, within a three (3) year period preceding this application/proposal, had one (1) or more public transactions (Federal, State or local) terminated for cause or default.
- (5) Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Signature of:

x _____
Bidder, if the bidder is an individual

x _____
Partner, if the bidder is a partnership

x _____
Officer, if the bidder is a corporation

Subscribed and sworn before me this _____ day of _____, 20__.

x _____ Notary Public

My commission expires: _____

APPENDIX F - ANTI-BRIBERY AFFIDAVIT
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)

RFP-01242018
NETWORK CABLING (CONTRACTOR)

_____, being first duly sworn deposes and says that he is an officer in the organization known as _____ and the party making a certain proposal or RFP dated, _____20____, to the Shelby County of Education:

I further confirm that: Neither I, nor to the best of my knowledge, information, and belief, the above business (as in defined in Section 39-16-101 of the State of Tennessee Code of Ethics Ordinance or any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in Section 39-16-102 Bribery of Public Servant has been convicted of bribery, attempted bribery, or conspiracy to bribe in violation of Tennessee Law, or of the law of any other state or federal law, except as follows (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court or administrative body, sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

Signature of:

x _____
Bidder, if the bidder is an individual

x _____
Officer, if the bidder is a corporation

x _____
Partner, if the bidder is a partnership

Subscribed and sworn before me this _____ day of _____, 20____.

x _____ Notary Public

My commission expires: _____

**APPENDIX G - CERTIFICATE OF INSURANCE COVERAGE
(TO BE SUBMITTED WITH TECHNICAL PROPOSAL)**

**RFP-01242018
NETWORK CABLING (CONTRACTOR)**

CONTRACTOR NAME: _____

ADDRESS: _____

NAME OF SURETY: (TYPE OR PRINT) _____

NAME OF AGENT: (TYPE OR PRINT) _____

AGENT'S PHONE NO: _____

The below signed hereby certifies that the following information is true and correct.

TYPE OF COVERAGE	MINIMUM REQUIRED LIMITS	POLICY OR BINDER NUMBER	ACTUAL LIMITS PROVIDED	EXPIRATION DATE
COMMERCIAL GENERAL LIABILITY OCC	\$1,000,000			
COMMERCIAL GENERAL LIABILITY AGG	\$3,000,000			
BUSINESS AUTOMOBILE LIABILITY	\$1,000,000 PER OCCURRENCE			
WORKMAN'S COMP	MARYLAND STATE MINIMUM COMPENSATION STATUTORY			

LIMITS ON ABOVE POLICY WILL BE INCREASED ABOVE POLICY NOW IN EFFECT

POLICY WILL BE OBTAINED/ISSUED ON _____

The following additional clauses will be considered a part of the above policy(s), the same as if specifically written therein, as pertains to the above stated contract.

- SCBE is hereby named as Additional Insured.
- The policy(s) cannot be reduced or cancelled without at least forty-five (45) days prior written notice to SCBE.
- The insurance company is prohibited from pleading government function in the absence of any specific written authority by SCBE.
- The policy(s) will be automatically included and cover all phases of work, equipment, persons, et cetera which are normally covered while performing work under the above contract, whether specifically written therein or not.

- SCBE is hereby granted authority to contact the agency directly to confirm SCBE information or obtain copies of certificates of insurance. SCBE bears no responsibility for premiums or other cost of insurance. If policy(s) is not currently in effect, it will be written immediately upon notice of award, and a copy of binder or certificate will be sent directly to SCBE. A properly executed copy of this document shall be legally binding as a Carrier Certificate of Insurance Form.

The successful bidder will be required to provide insurance coverage as shown in General Conditions of RFP and Contract, prior to beginning any work. This insurance coverage must be maintained throughout the life of the contract. **PROOF THAT COVERAGE IS EITHER CURRENTLY IN PLACE OR WILL BE PROVIDED MUST BE SUBMITTED WITH THE BID.** This can be done by one of the two following methods:

Complete form "CERTIFICATION OF INSURANCE COVERAGE" or

Submit a Certificate of Insurance on a form provided by your Insurance Agent. This form must include the following clauses:

SCBE is hereby named as Additional Insured.

The policy(s) cannot be reduced or canceled without at least forty-five (45) days' prior written notice to SCBE.

The insurance company is prohibited from pleading government function in the absence of any specified written authority from SCBE.

The policy(s) will automatically include and cover all phases of work, equipment, persons, et cetera which are normally covered while performing work under the above contract, whether specifically written therein or not.

Regardless of the method used, the form **MUST** be totally complete, **MUST** show that all Limits of Insurance are or will be met, and **MUST** be signed by the Agent.

Failure to provide the required insurance coverage by either of the two (2) methods described above when the RFP is submitted may result in rejection of your RFP as being non-responsive.

(AUTHORIZED AGENT'S SIGNATURE)

(DATE)

**APPENDIX H - FINANCIAL PROPOSAL FORM
(TO BE SUBMITTED WITH FINANCIAL PROPOSAL)**

**PRICING SCHEDULE
NETWORK CABLING (E-RATE CONTRACTOR)
RFP# 01242014**

SCBE has a very wide range of building structure types (some new, some older, etc.). Therefore, it is imperative that the successful Cabling Service Provider chosen from this RFP is able to make all kinds of installations in all types of situations. Listed below are a few scenarios so that we may have an idea of cost estimates that would exist in basic installations.

Cabling Service Provider shall provide the Shelby County Board of Education ("SCBE") or its Office of Network Cabling and Electronics (NCE) with complete pricing for the following. Cost for work pertaining to this RFP will be fixed price bids for the term of the contract. Total contract amount must include travel and related expenses, as well as reflect all services and deliverables described within this proposal, which can be revised should Shelby County Schools Board of Education ("SCBE") decide not to move forward with specific deliverables. All monetary amounts are United States currency to nearest dollar amount. Bidders must submit the following pricing list using either all CommScope Systemax or all Panduit Full solution products of highest grade or Equivalent Approved Equal.

Each Bidder shall provide the Shelby County Board of Education ("SCBE") or its Office of Network Cabling and Electronics (NCE) with complete pricing of basic network cabling scenarios listed below. Please note that the estimates for E-rate cabling scenarios will be evaluated separately than those of Non-E-rate scenarios. The proposed costs submitted shall remain valid for at least 120 days subsequent to the date of the RFP Proposal opening and thereafter in accordance with any resulting contract between the Bidder and SCBE.

SCBE has a wide range of projects that may include projects with Davis Bacon Act wages, prevailing wages and other wage standards. The successful Cabling Service Provider shall understand and implement these various wage standards when instructed to do so by SCBE, E-rate or government entities for various projects. For all intended purposes, the Bidder to this RFP will use whatever wage standard it would prefer to use on a regular basis to calibrate the pricing estimates on the list shown below.

PRICING LIST FOR NETWORK CABLING		
(SERVICE PROVIDER -CONTRACTOR)		
<i>The following Installation Scenarios can also be used for E-rate projects</i>		
CABLING INSTALLATION SCENARIOS		
#	ITEM DESCRIPTION PRICING LIST (Cost of installing the following items, parts and labor included)	PRICE
P1. Estimate to Install	One (1) Plenum rated Category-six Giga Speed cable, data cable connector, and labor per installed cost per 150-foot average using new pathways. <i>(Install shall include one (1) data box, two (2) - 3/4 conduit sleeves, one (1) - 10 ft. 3/4 conduit stub-up, one (1) 8' category-6 patch cable, approximate 50 - J hook supports, misc. straps, fittings and accessories.)</i>	\$

<p>P2. Estimate to Install</p>	<p>One (1) Plenum rated Category-six Giga Speed cable, data cable connector, and labor per installed cost per 300-foot average using new pathways.</p> <p><i>(Install shall include one (1) data box, two (2) - ¾ conduit sleeves, one (1) - 10 ft. ¾ conduit stub-up, one (1) 8' category-6 patch cable, approximate 100 - J hook supports, misc. straps, fittings and accessories.</i></p>	<p>\$</p>
<p>P3. Estimate to Install</p>	<p>Thirty (30) Plenum rated Category-six Giga Speed cables, data cable connectors, and labor per installed cost per 300-foot average using new pathways.</p> <p><i>(Install shall include 100' of Panduit Twin-70 raceway system, two (2) Wiremold 30TP-4V Tele-power pole, four (4) -2" conduit sleeves, one (1) - 4" core drill, thirty (30) 8' category-6 patch cable, one (1) 48 - port category-6 patch panel, approximate 100 - J hook supports, misc. straps, fittings and accessories.</i></p>	
<p>P4. Estimate to Install</p>	<p>One (1) Plenum rated Category-6A Giga Speed cable, data cable connector, and labor per installed cost per 150-foot average using new pathways.</p> <p><i>(Install shall include one (1) data box, two (2) - ¾ conduit sleeves, one (1) - 10 ft. ¾ conduit stub-up, one (1) 8' category-6A patch cable, approximate 50 - J hook supports, misc. straps, fittings and accessories.)</i></p>	<p>\$</p>
<p>P5. Estimate to Install</p>	<p>One (1) Plenum rated Category-6A Giga speed cable, data cable connector, and labor per installed cost per 300-foot average using new pathways.</p> <p><i>(Install shall include one (1) data box, two (2) - ¾ conduit sleeves, one (1) - 10 ft. ¾ conduit stub-up, one (1) 8' category-6 patch cable, approximate 100 - J hook supports, misc. straps, fittings and accessories.</i></p>	<p>\$</p>
<p>P6. Estimate to Install</p>	<p>Thirty (30) Plenum rated Category-6A Giga Speed cables, data cable connectors, and labor per installed cost per 300-foot average using new pathways.</p> <p><i>(Install shall include 100' of Panduit Twin-70 raceway system, two (2) Wiremold 30TP-4V Tele-power poles, four (4) -2" conduit sleeves, one (1) - 4" core drill, thirty (30) 8' category-6A patch cables, one (1) 48 - port category-6A patch panel, approximate 100 - J hook supports, misc. straps, fittings and accessories.)</i></p>	<p>\$</p>
<p>P7. Estimate to Install</p>	<p>Install into a new or existing cable rack. One (1) Discrete category-6, 24 port patch panel.</p>	<p>\$</p>
<p>P8. Estimate to Install</p>	<p>Install into a new or existing cable rack. One (1) Discrete category-6A, 24 port patch panel.</p>	<p>\$</p>

P9. Estimate to Install	Install into a new or existing cable rack. One gigaspeed category-6, 24port patch panel.	\$
P.10 Estimate to Install	Install into a new or existing cable rack. One gigaspeed category-6A, 24 port patch panel.	\$
P11. Estimate to Install	Install into a new or existing cable rack. One gigaspeed category-6, 48 port patch panel.	\$
P12 Estimate to Install	Install into a new or existing cable rack. One gigaspeed category-6A, 48 port patch panel.	\$
P13. Estimate to Install	One (1) 6 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 300-foot average distance using new indoor pathway. <i>(Proposed indoor Installation must include Termination of all 6 - strands on a fiber patch panel on each end. 2 - 1" conduit sleeves, one (1) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 70 - J hook supports, miscellaneous straps, fittings and accessories).</i>	\$
P14. Estimate to Install	One (1) 6 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 500-foot average distance using new pathway. <i>(Proposed indoor Installation must include Termination of all 6 - strands on a new fiber patch panel on each end. 2 - 1" conduit sleeves, one (1) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 100 - J hook supports, miscellaneous straps, fittings and accessories).</i>	\$
P15. Estimate to Install	One (1) 6 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 700-foot average distance using new pathway. <i>(Proposed indoor Installation must include Termination of all 6 - strands on a new fiber patch panel on each end. 2 - 1" conduit sleeves, one (1) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 150 - J hook supports, miscellaneous straps, fittings and accessories).</i>	\$
P16. Estimate to Install	One (1) 12 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 300-foot average distance using new pathway. <i>(Proposed indoor Installation must include Termination of all 12 - strands on a new fiber patch</i>	\$

	<i>panel on each end. 2 - 1 ¼ " conduit sleeves, three (3) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 70 - J hook supports, miscellaneous straps, fittings and accessories).</i>	
P17. Estimate to Install	<p>One (1) 12 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 500-foot average distance using new pathway.</p> <p><i>(Proposed indoor Installation must include Termination of all 12 - strands on a fiber patch panel on each end. 2 - 1 ¼ " conduit sleeves, three (3) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 100 - J hook supports, miscellaneous straps, fittings and accessories).</i></p>	\$
P18. Estimate to Install	<p>One (1) 12 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 700-foot average distance using new pathway.</p> <p><i>(Proposed indoor Installation must include Termination of all 12 - strands on a fiber patch panel on each end. 2 - 1 ¼ " conduit sleeves, three (3) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 150 - J hook supports, miscellaneous straps, fittings and accessories).</i></p>	\$
P19. Estimate to Install	<p>One (1) 24 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 300-foot average distance using new pathway.</p> <p><i>(Proposed indoor Installation must include Termination of all 24 - strand on a fiber patch panel on each end. 2 - 1 ½ " conduit sleeves, six (6) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 70 - J hook supports, miscellaneous straps, fittings and accessories).</i></p>	\$
P20. Estimate to Install	<p>One (1) 24 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 500-foot average distance using new pathway.</p> <p><i>(Proposed indoor Installation must include Termination of all 24 - strand on a fiber patch panel on each end. 2 - 1 ½ " conduit sleeves, six (6) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 100 - J hook supports, miscellaneous straps, fittings and accessories).</i></p>	\$
P21. Estimate to Install	<p>One (1) 24 Strand, Duplex OM4 50/125 micron, Indoor/Outdoor Plenum rated, Direct Burial, Laser Optimize, Interlock Armor, Multimode Fiber Optic Cable, LC connection type, and labor per installed cost per 700-foot average distance using new pathway.</p> <p><i>(Proposed outdoor Installation must include Termination of all 24 - strands of fiber on a new fiber patch panel on each end. 4 - 1 ½ " conduit sleeves, six (6) 3 meters OM4 LC to LC Duplex Fiber Patch Cable 100G Multimode 50/125, approx. 150 - cable supports and miscellaneous straps, provide hardware fittings and accessories to attach cable to three (3) existing poles to be used as a pathway to other outdoor buildings.)</i></p>	\$

	MAINTENANCE INSTALLATION SCENARIOS	
	<i>The following Installation Scenarios can also be used for E-rate projects</i>	
P22. Estimate to install	Estimate cost to Repair/Replace a broken Cat 6 connector jack and broken 4 gang plates.	\$
P23. Estimate to install	Estimate cost to FUSION SPLICE A BROKEN (FIBER OPTIC CABLE) --24 Strand 50/125-micron multimode cable Indoor/Outdoor Fiber cable, Tight Buffer, LC connectors, <i>(Every Strand is broken)</i>	\$
P24. Estimate to install	Estimate cost to repair (example). Water from a leaking roof has damaged a 24 port category-6 patch panel and all its terminations -- -Use the slack to re-terminate 12 ports that were damaged	\$
P25. Estimate to install	Estimate cost to: Re-test and label 30 - Cat-6 data drops - (distance is 300 ft. from rack to classroom)	\$
P26. Estimate to install	Estimate the following Network Cabling Cost: A. Per – Hour labor rate for regular business hour operations. Per - Hour Service call rate for after your normal business hour operations.	\$ \$
P27. Estimate to install	Core Drill Price Cost: A. Install one (1) 2” sleeve through 6-inch concrete. B. Install one (1) 4” sleeve through 6-inch concrete. Include Fire Chalk Cost	
	NON E-RATE INSTALLATION SCENARIOS (Electrical Wiring)	
P28. Estimate to install	Install a 3-Phase 480-volt 75-KVA K rated transformer -- Include all associated cost of wiring, conduit and appropriate breakers size on both end of installations. Using a factor of 208/120 volts, 200 ampere Panel secondary, 200 ft from Main power source.	\$

P29. Estimate to install	Installation of 200 amp 42 circuit panel (isolated ground) Include all associated cost of wiring, conduit and breaker installations using a factor of 100ft to a 208 volt source	\$
P30. Estimate to install	Installation of one (1) new 20 amp 110 volt electrical circuit from an existing Isolated ground computer panel. Install a 20 amp breaker in computer panel and six TVSS Isolated ground duplex receptacles with label covers in various location of classroom. Use #12 THHN cu conductors, not to exceed 150 feet. (conduit installation included in price quote)	\$
P31. Estimate to install	Installation of three (3) new 20 amp 110 volt electrical circuits for a new computer lab. Derive circuits from an existing Isolated ground computer panel. Provide three (3) 20 amp breakers and eighteen (18) TVSS Isolated ground duplex outlets with label covers. Price two (2) circuits or twelve (12) duplex receptacles installed in an existing 100' of Panduit Twin - 70 raceway and three (3) duplex receptacles installed in each existing 30TP-4V Wiremold Tele-power pole. Use #12 THHN cu conductors, not to exceed 150 feet. Continuation form P31-- Job Note: 1.The price of installing Panduit and Tele-power poles raceways in classroom shouldn't be included in this price quote. 2. Conduit installation and pathways to electrical panels should be included in this price quote.	\$
P32. Estimate to install	Estimate the total cost of the following installation : Install one (1) 2- post 7ft x 19 in single rack, one (1) 7ft Vertical Cable Manager with kit, Three (3) Horizontal Cable Managers, one (1) Telecommunications Grounding Busbar 12 inch x 4 inch x .25 inch with kit. The price quote should include the installation of a #4 copper grounding wire install from the Building Main grounding point (this example 300ft) to the new Telecommunications Grounding Busbar and then to the new data rack.	
P33. Non-E-rate	Estimate the following Electrical Installation Cost: A. Per – Hour labor rate for regular business hour operations. B. Per - Hour Service call rate for after your normal business hour operations.	\$ \$

SECTION E - FORMS AND DOCUMENTS

CABLING SERVICE PROVIDER SUMMARY PROFILE AND QUESTIONNAIRE

This document is to be filled out by cabling companies responding to this RFP. It is intended to give us a better feel for the companies and to better compare competitive bids.

Company Information

A. Name: _____

B. Address: _____

C. How long has your company been in the data, voice security cabling business? (Briefly elaborate)

D. How long has your company been in the electrical wiring field?

E. **Office contact:**

1. Name: _____

2. Phone: _____

3. Fax: _____

4. Email: _____

F. **Technical Contact** (The Shelby County Board of Education considers this the project manager who would oversee the actual installations):

1. Name: _____

2. Phone: _____

3. FAX: _____

4. Email: _____

G. How long has the project manager been with your company? _____

H. How long has the project manager been in the cabling business? _____

I. What certifications and licensing credentials does your company own?

J. How many Cable installers does the company employ? _____

K. How many Electricians does the company employ? _____

L. What certifications/credentials does the cable installer(s) have?

M. Who holds the RCDD for your company? _____

N. Who holds the Master Electrical license for your company? _____

O. Briefly describe your company's organizational structure including ownership?

P. Briefly describe your company's financial status?

SECOND TIER PURCHASING

Shelby County Board of Education utilizes a race neutral program for all purchases and contracts. In order to set benchmarks for all MWBE and Local Business Enterprises, we ask that our vendors review and actively participate per Policy 2010 and 2011 in Section D of this RFP.

In order to track the purchases and contracts issued to MWBE's (Minority Women Business Enterprises), we ask our vendors to indicate their level of second tier purchasing commitment. Second tier purchasing is defined below:

Second-tier purchasing is the process through which a first-tier (or prime) supplier utilizes a minority supplier either directly or indirectly.

Please indicate below the level of participation, in both dollars and percentage that would define the level of minority business enterprise participation for this project.

Second Tier
Commodity _____

(Example: Office supply vendors may purchase subsets from minority owned companies. Manufacturers may purchase a certain percentage from minority suppliers. This line asks for the commodity.)

M/WBE category for second tier supplier - PLEASE CHECK ONE:

- Hispanic
- Black
- Asian American
- Native American Indian
- Woman Owned

Dollars expended for this commodity, this project
\$ _____

Percentage of this project _____ %

Name of Business (Please Print)

Print Authorized Representative Name

Signature of Authorization Representative

Date



**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY
MATTERS –
PRIMARY AND LOWER TIER COVERED TRANSACTIONS**

1. By signing and submitting this proposal, the prospective primary and/or lower tier participant ("participant") is providing the certification set out below. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction, however failure of the prospective participant to furnish a certification or explanation shall disqualify such person from participation in this transaction. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government the department or agency with which this transaction originated may pursue available remedies, including termination for cause or default, suspension and/or debarment.
3. The prospective participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective participant learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances.
4. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all covered transactions and in all solicitations for covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Federal Procurement and Non-Procurement Programs.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including termination of this transaction for cause or default, suspension and/or debarment.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary
Exclusion—Primary and/or Lower Tier Covered Transactions**

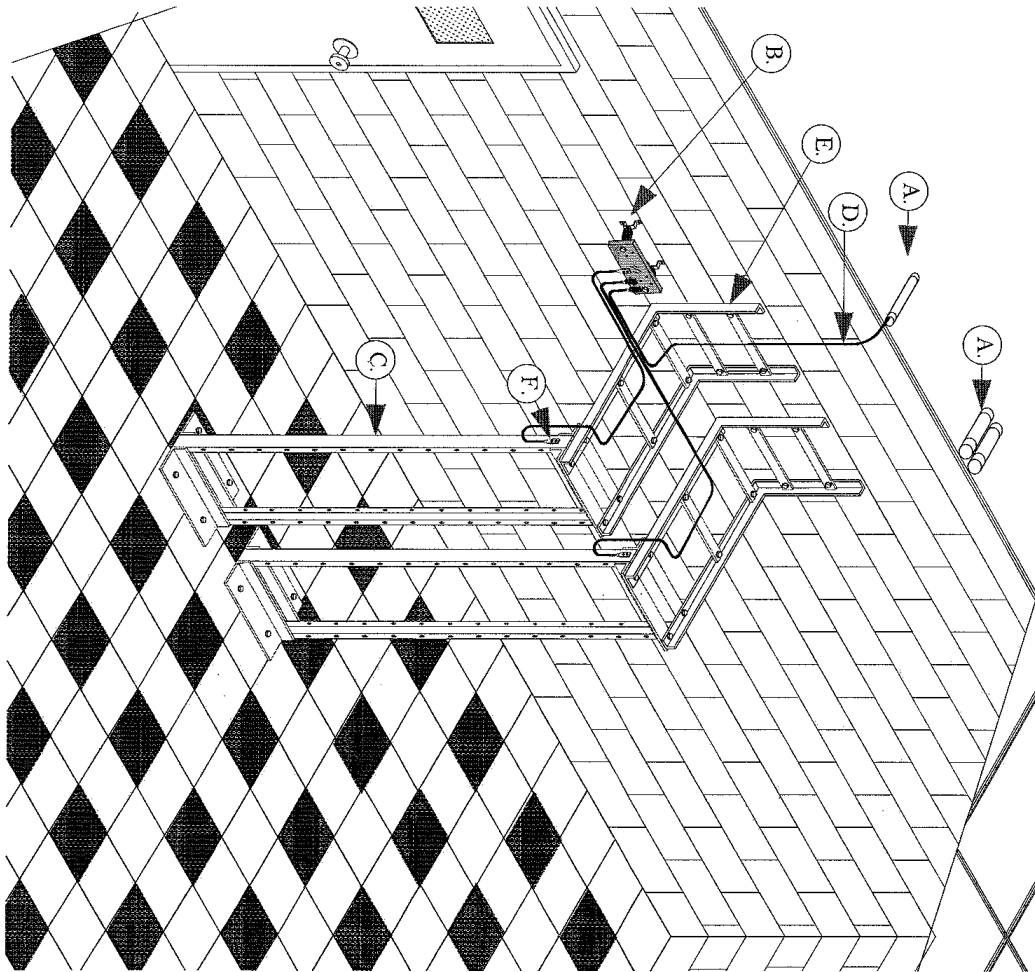
- (1) The prospective participant certifies to the best of its knowledge, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) The prospective participant and its principals have not, within a three (3) year period preceding this proposal, 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) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
- (3) The prospective participant and its principals 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 in Paragraph 2 of this certification.
- (4) The prospective participant and its principals have not, within a three (3) year period preceding this application/proposal, had one (1) or more public transactions (Federal, State or local) terminated for cause or default.
- (5) Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Agency:

Signature:

Date:

SECTION F - DRAWINGS AND ILLUSTRATIONS

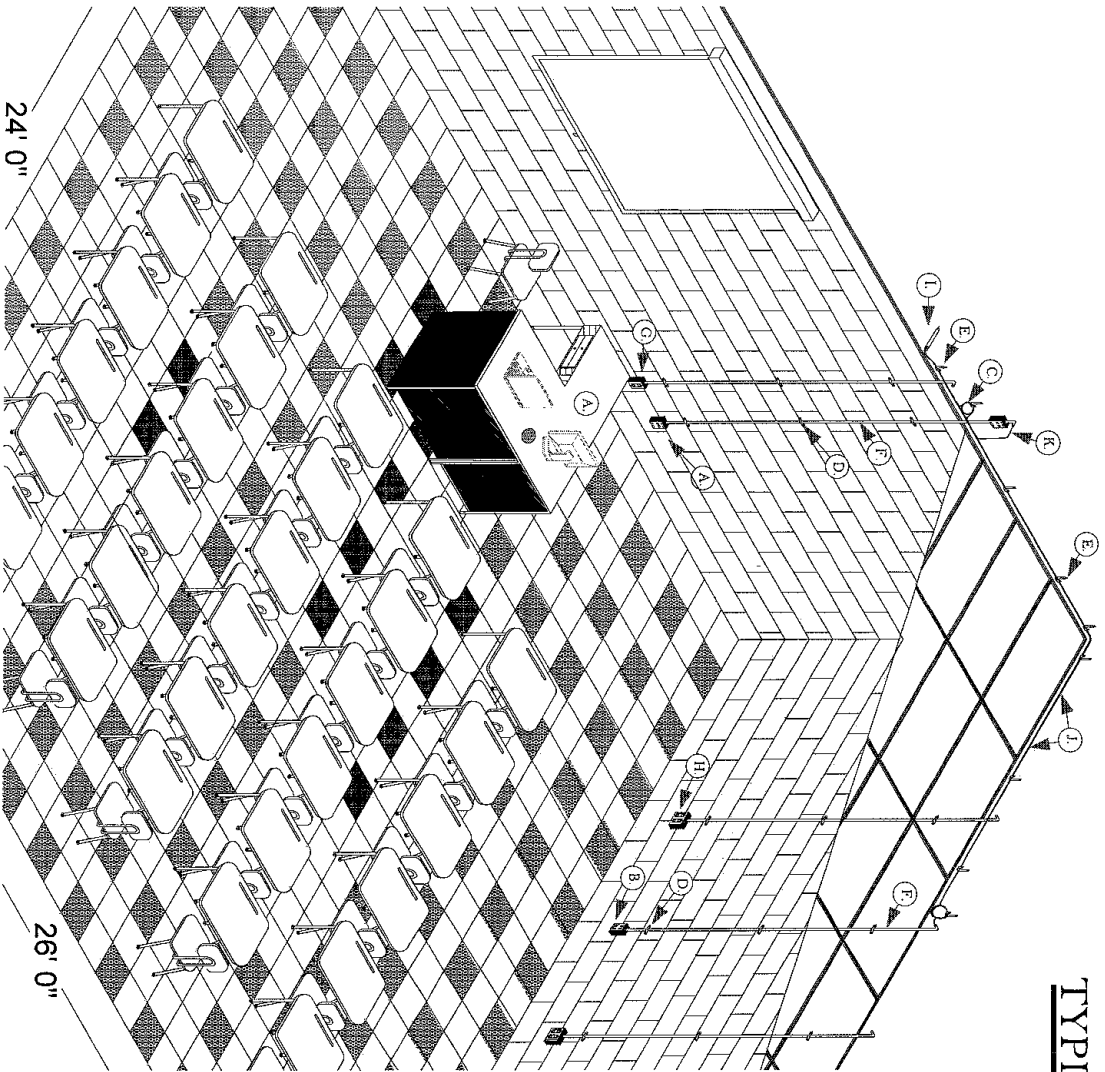


DATA CLOSET DETAIL
 INSTALL NEW CABLE TRAY EXTENDING FROM THE BOTTOM OF THE POINT OF ENTRY OF THE CABLE SLEEVE TO THE RACKS AS SHOWN
 INSTALL #4-CU THHN FROM NEW GROUND BUS TO EACH CABLE RACK USING CABLE TRAY AS SUPPORT
 INSTALL GROUND BUSS AT MDF AND ALL IDF'S (LOCATE BEHIND RACKS AS SHOWN.)

LEGEND

A.	NIPPLE
B.	GROUNDING BUSS
C.	DATA RACK
D.	#4 COPPER CONDUCTOR
E.	CABLE TRAY
F.	GROUNDING LUG

TYPICAL CLASSROOM DETAIL



LEGEND

A	Teacher Computer Outlets-Two Data
B	Student Computer Outlets-Four Data
C	Category-six Cable
D	Two Hole Straps
E	J-Hooks
F	3/4" CONDUIT
G	DUPLEX TVSS RECP.
H	DOUBLE DUPLEX TVSS RECP.
I	NIPPLE
J	VELCRO
K	WIRELESS DATA BOX

**Shelby County Schools' Division of Facilities Maintenance
Standard for Placement of Aerial Cables on Poles.**

The Shelby County Schools' Facilities Maintenance has the responsibility to install poles for the purpose of providing the various overhead services to the portable classrooms. To provide overhead clearance for service vehicles and the relocation of the portable classrooms, it is essential that the aerial cable placement standard be followed.

Fire alarm, security, intercom and computer fiber optic aerial-type cables may be attached to and suspended from Shelby County Schools' electrical power poles providing electric power to the portable classroom(s), with the exception of Pole P1 (Identifiable as the pole with a MLGW electric meter on it). No cable shall be attached to or suspended from Memphis Light, Gas and Water Division power or light poles (Identifiable by a MLGW numbered tag).

Electrical Cables. *Electrical cable shall be attached 22'-6" above the finished grade on a 24' pole, with the exception of Pole P2 (See dimensions on attached drawing).*

Fire Alarm Cables. *Fire alarm cable shall be attached 20'-6" above the finished grade on a 24' pole, with the exception of Pole P2 (See dimensions on attached drawing).*

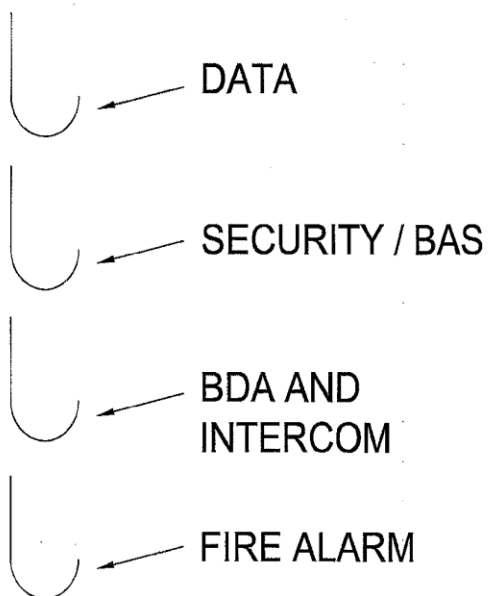
Intercom Cables. *Intercom cable shall be attached 19'-0" above the finished grade on a 24' pole, with the exception of Pole P2 (See dimensions on attached drawing).*

Computer Cables. *Computer cable shall be attached 18'-6" above the finished grade on a 24' pole, with the exception of Pole P2 (See dimensions on attached drawing).*

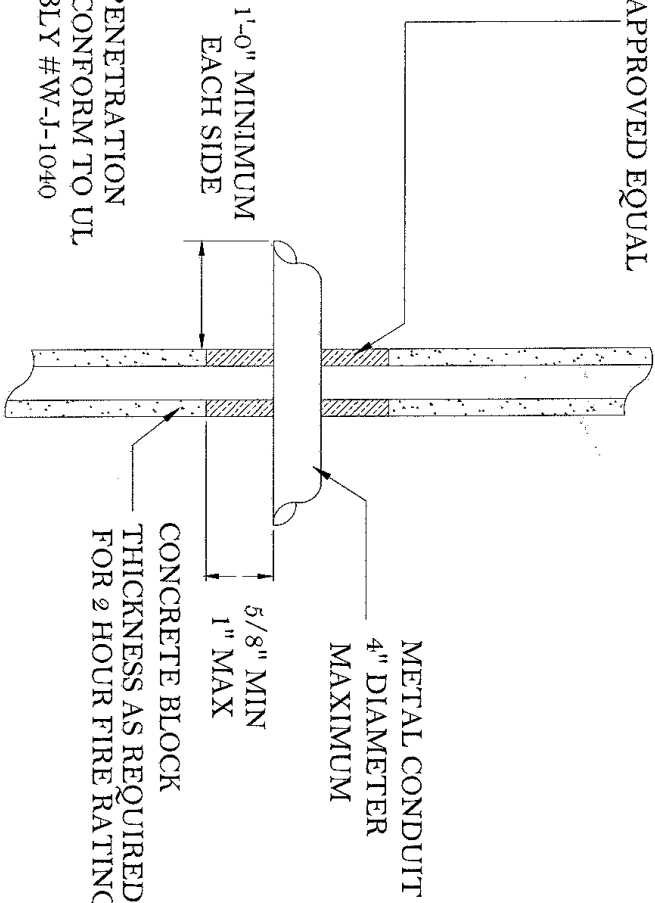
Security Cables. *Security cable shall be attached 18'-0" above the finished grade on a 24' pole, with the exception of Pole P2 (See dimensions on attached drawing).*

It is recognized that all existing cables do not meet this standard, but each involved and responsible party shall make the attempt to rectify these conditions when providing routine maintenance repairs and installing new services in these locations.

J-HOOK CABLING PLACEMENT DESIGNATIONS

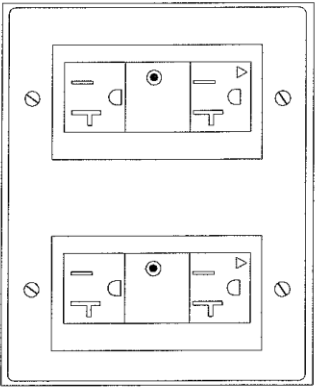


FILL VOID WITH
 UL LISTED SEALANT
 TO A MINIMUM OF
 1-1/4" THICKNESS
 FLUSH WITH BOTH
 SIDES OF WALL.
 JOHNS MANVILLE INTERNATIONAL INC
 TYPE FIRETEMP "CI"
 OR AN APPROVED EQUAL

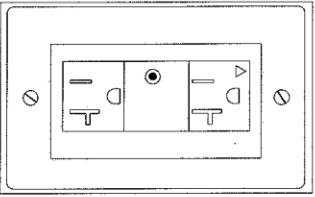


WALL PENETRATION
 SHALL CONFORM TO UL
 ASSEMBLY # WJ-1040

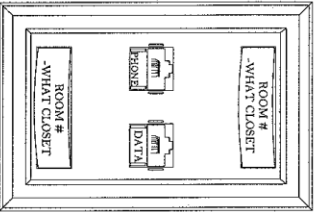
4 NTS TWO HOUR WALL PENETRATION DETAIL



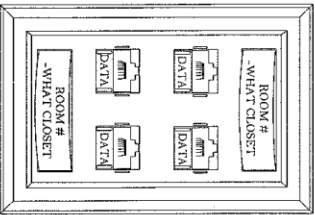
DOUBLE DUPLEX TVSS RECEPTACLE:



DUPLEX TVSS RECEPTACLE:

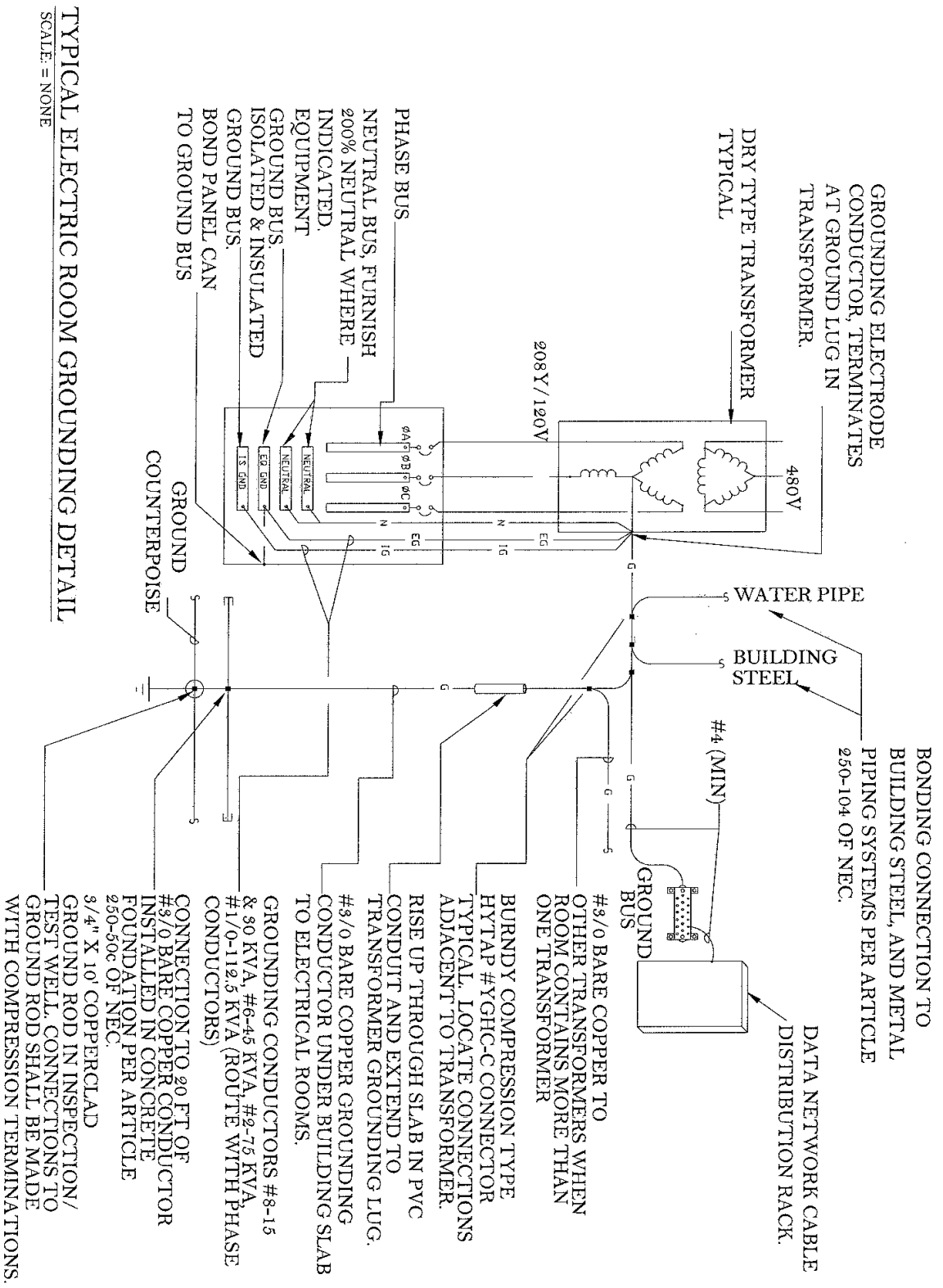


TWO DATA OUTLETS:



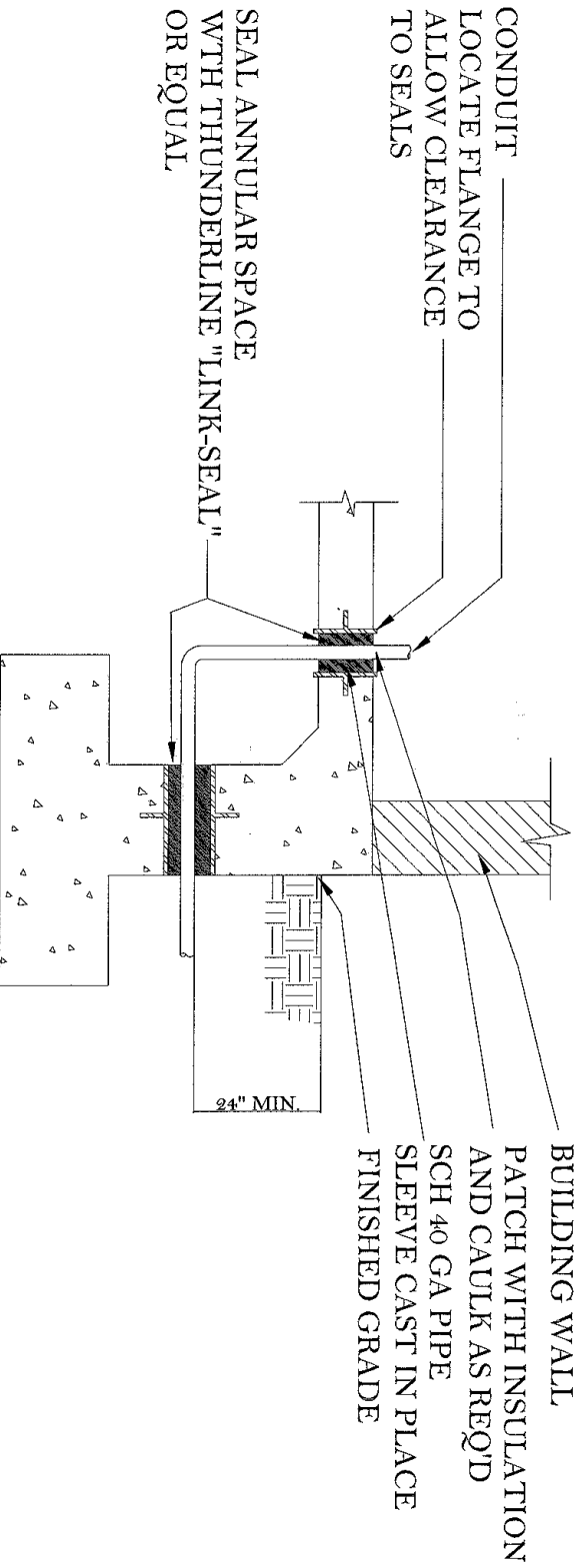
FOUR DATA OUTLETS:

DATA & ELECTRICAL PLATE DETAILS



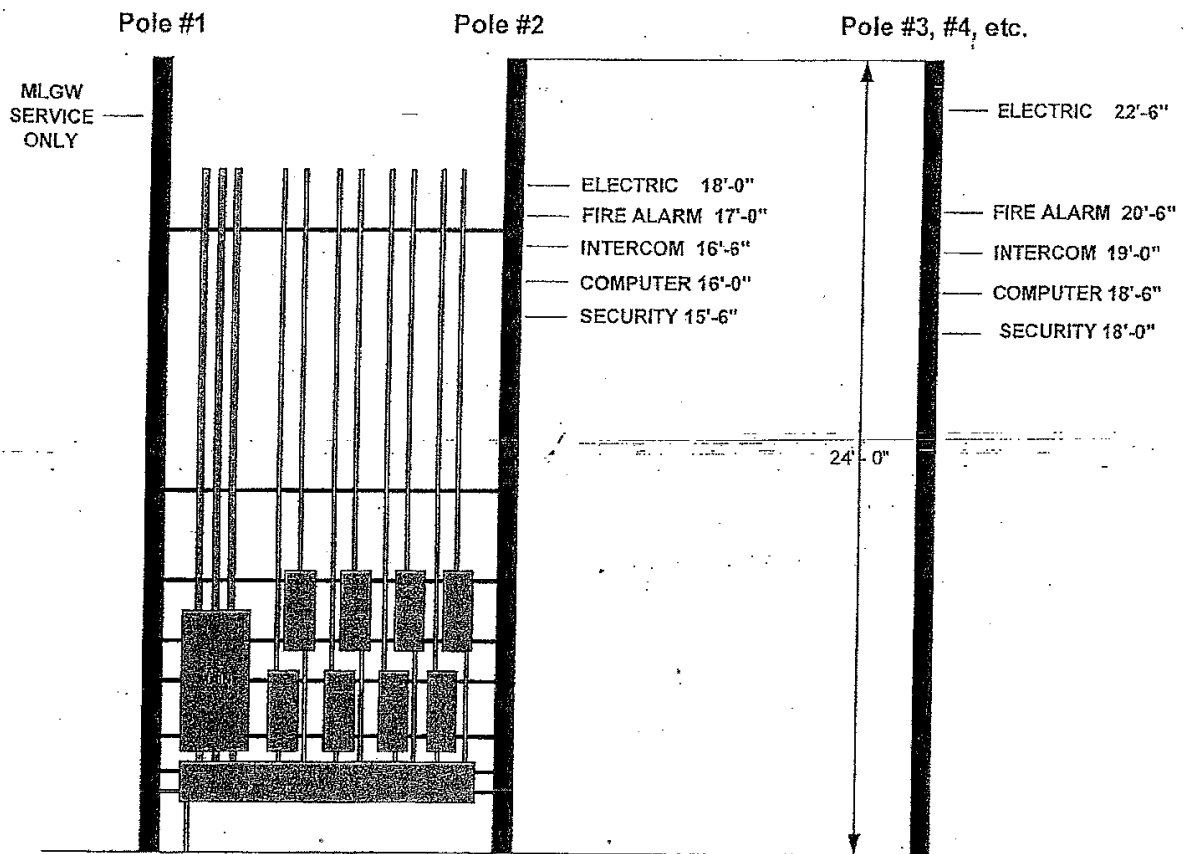
TYPICAL ELECTRIC ROOM GROUNDING DETAIL

SCALE: = NONE



2 NTS CONDUIT PENETRATION THRU FOUNDATION

SCS STANDARD FOR PLACEMENT OF AERIAL CABLES ON POLES



SECTION G - APPENDICES

APPENDIX A ADMINISTRATIVE OFFICES AND SCHOOL LOCATIONS

Facility Name	Street Address	City	Zip Code
A MACEO WALKER MIDDLE SCHOOL	1900 East Raines Rd.	Memphis	38116
A. B. HILL ELEMENTARY SCHOOL	345 E. Olive	Memphis	38104
AIRWAYS MIDDLE SCHOOL	2601 Ketchum	Memphis	38118
ALCY ELEMENTARY SCHOOL	1750 Alcy Rd	Memphis	38114
ALTON ELEMENTARY SCHOOL	2020 Alton	Memphis	38106
AMERICAN WAY MIDDLE SCHOOL	3805 American Way	Memphis	38118
AVON LENOX SCHOOL	310 N. Avon Rd.	Memphis	38117
BARRET'S CHAPEL ELEMENTARY SCH	10280 Godwin Rd.	Memphis	38002
BELLE FOREST COMMUNITY SCHOOL	3135 Ridgeway Rd	Memphis	38115
BELLEVUE JUNIOR HIGH SCHOOL	575 S. Bellevue	Memphis	38104
BERCLAIR ELEMENTARY SCHOOL	810 N. Perkins	Memphis	38122
BETHEL GROVE ELEMENTARY SCHOOL	2459 Arlington	Memphis	38114
BOLTON HIGH SCHOOL	7323 Brunswick Rd.	Memphis	38002
BROWNSVILLE ROAD ELEM SCHOOL	5292 Banbury	Memphis	38134
BRUCE ELEMENTARY SCHOOL	581 South Bellevue Blvd.	Memphis	38104
CAMPUS ELEMENTARY SCHOOL	535 Zach Curlin	Memphis	38152
CARNES ELEMENTARY SCHOOL	943 J. W. Williams Ln.	Memphis	38105
CARVER HIGH SCHOOL	1591 Pennsylvania	Memphis	38109
CENTRAL HIGH SCHOOL	306 S. Bellevue	Memphis	38104
CHARJEAN ELEMENTARY SCHOOL	2140 Charjean Rd.	Memphis	38114
CHEROKEE ELEMENTARY SCHOOL	3061 Kimball	Memphis	38114
CHICKASAW JUNIOR HIGH SCHOOL	4060 Westmont	Memphis	38109
CHIMNEYROCK ELEMENTARY SCHOOL	8601 Chimneyrock	Memphis	38016

	Blvd.		
COLONIAL MIDDLE SCHOOL	1370 Colonial Rd.	Memphis	38117
CORDOVA ELEMENTARY	750 Sanga Rd.	Memphis	38106
CORDOVA HIGH SCHOOL	900 Sanga Rd.	Memphis	38118
CORDOVA MIDDLE SCHOOL	1800 Berryhill Rd.	Memphis	38016
CRAIGMONT HIGH	3333 Covington Pike	Memphis	38128
CRAIGMONT MIDDLE	3455 Covington Pike	Memphis	38128
CROMWELL ELEMENTARY SCHOOL	4989 Cromwell	Memphis	38118
CRUMP ELEMENTARY SCHOOL	4405 Crump Rd.	Memphis	38141
CUMMINGS ELEMENTARY SCHOOL	1037 Cummings	Memphis	38106
DELANO ELEMENTARY SCHOOL	1716 Delano Rd.	Memphis	38127
DEXTER ELEMENTARY SCHOOL	7105 Dexter Rd.	Memphis	38016
DEXTER MIDDLE SCHOOL	6988 Raleigh LaGrange Rd.	Memphis	38018
DOUBLE TREE ELEMENTARY SCHOOL	4560 Double Tree	Memphis	38109
DOUGLASS ELEMENTARY SCHOOL	1650 Ash St.	Memphis	38108
DOUGLASS HIGH SCHOOL	3200 Mt. Olive Road	Memphis	38108
Downtown Elementary SCHOOL	10 N. Fourth	Memphis	38103
DUNBAR ELEMENTARY SCHOOL	2606 Select	Memphis	38114
E JETER ELEMENTARY SCHOOL	7662 Benjestown Rd.	Memphis	38053
EAST CAREER AND TECHNOLOGY CENTER	3206 Poplar	Memphis	38111
EGYPT ELEMENTARY SCHOOL	4160 Karen Cove	Memphis	38128
EVANS ELEMENTARY SCHOOL	4949 Cottonwood	Memphis	38118
FORD ROAD ELEMENTARY SCHOOL	3336 Ford Rd	Memphis	38109
FOX MEADOWS ELEMENTARY	2960 Emerald	Memphis	38115
FREEMAN ELEMENTARY SCHOOL	5250 Tulane Rd.	Memphis	38109
GARDENVIEW ELEMENTARY SCHOOL	4075 Hartz Dr.	Memphis	38116
GEETER MIDDLE SCHOOL	4649 Horn Lake	Memphis	38109

GEORGIAN HILLS JR HIGH SCHOOL	3925 Denver Rd.	Memphis	38127
GERMANSHIRE ELEMENTARY	3965 S. Germantown Rd	Memphis	38125
GERMANTOWN ELEMENTARY SCHOOL	2730 Cross Country Dr.	Memphis	38138
GERMANTOWN HIGH SCHOOL	7653 Old Poplar Pike	Memphis	38138
GERMANTOWN MIDDLE SCHOOL	7925 C.D. Smith Rd.	Memphis	38138
GETWELL ELEMENTARY SCHOOL	2795 Getwell Rd.	Memphis	38118
GOODLETT ELEMENTARY SCHOOL	3001 Goodlett	Memphis	38118
GRAHAMWOOD ELEMENTARY SCHOOL	3950 Summer	Memphis	38122
GRANDVIEW ELEM SCHOOL	2342 Clifton	Memphis	38127
HAMILTON ELEMENTARY SCHOOL	1378 Ethlyn	Memphis	38106
HAMILTON HIGH SCHOOL	1363 Person	Memphis	38106
HAMILTON MIDDLE SCHOOL	1478 Wilson St.	Memphis	38106
HAVENVIEW JUNIOR HIGH SCHOOL	1481 Hester	Memphis	38116
HAWKINS MILL ELEMENTARY SCHOOL	4295 Mountain Terrace	Memphis	38127
HICKORY RIDGE ELEMENTARY	3890 Hickory Hill Rd.	Memphis	38115
HICKORY RIDGE MIDDLE SCHOOL	3920 Ridgeway Rd.	Memphis	38115
HIGHLAND OAKS ELEMENTARY	5252 Annandale Dr.	Memphis	38125
HIGHLAND OAKS MIDDLE	5600 Meadowbriar Trail	Memphis	38125
HOLLIS F. PRICE MIDDLE COLLEGE	807 Walker Ave.	Memphis	38126
HOLMES ELEMENTARY SCHOOL	995 S. Lauderdale St.	Memphis	38126
IDA B. WELLS ACADEMY	1950 Linden	Memphis	38104
IDLEWILD ELEMENTARY SCHOOL	1950 Linden	Memphis	38104
JACKSON ELEMENTARY SCHOOL	3925 Wales	Memphis	38108
KATE BOND ELEMENTARY SCHOOL	2727 Kate Bond Rd.	Memphis	38133
KATE BOND MIDDLE SCHOOL	2737 Kate Bond Road	Memphis	38133

KEYSTONE ELEMENTARY SCHOOL	4301 Old Allen Rd.	Memphis	38128
KINGSBURY ELEMENTARY SCHOOL	4055 Bayliss	Memphis	38108
KINGSBURY MIDDLE SCHOOL	1276 North Graham	Memphis	38122
KINGSBURY SENIOR HIGH SCHOOL	1270 N. Graham	Memphis	38122
KINGSBURY VOC-TECH SCHOOL	1328 N. Graham	Memphis	38122
KIRBY HIGH SCHOOL	4080 Kirby Parkway	Memphis	38115
KIRBY MIDDLE SCHOOL	6670 E. Raines Rd.	Memphis	38115
KNIGHT ROAD ELEMENTARY SCHOOL	3237 Knight Rd.	Memphis	38118
LAROSE ELEMENTARY SCHOOL	864 S. Wellington Street	Memphis	38126
LEVI ELEMENTARY SCHOOL	135 W. Levi Road	Memphis	38109
LOWRANCE ELEMENTARY SCHOOL	7740 Lowrance Rd.	Memphis	38125
LUCIE E CAMPBELL ELEMENTARY SCHOOL	3232 Birchfield	Memphis	38118
LUCY ELEMENTARY SCHOOL	6269 Amherst Rd.	Memphis	38053
MACON HALL ELEMENTARY SCHOOL	9800 Macon Rd.	Memphis	38018
MAGNOLIA ELEMENTARY SCHOOL	2061 Livewell Cir.	Memphis	38114
MANASSAS HIGH SCHOOL	1111 Manassas	Memphis	38107
MANOR LAKE ELEMENTARY SCHOOL	4900 Horn Lake Rd.	Memphis	38109
Maxine Smith STEAM Academy	750 E. Parkway S.	Memphis	38104
MCS PREP SCHOOL NORTHEAST	968 N. Mendenhall	Memphis	38122
MCS PREP SCHOOL NORTHWEST	1266 Poplar	Memphis	38104
MCS PREP SCHOOL SOUTHWEST	1237 College	Memphis	38106
MELROSE HIGH SCHOOL	2870 Deadrick	Memphis	38114
MIDDLE COLLEGE HIGH SCHOOL	750 E. Parkway S	Memphis	38104
MITCHELL HIGH SCHOOL	658 Mitchell	Memphis	38109
MOUNT PISGAH MIDDLE SCHOOL	1444 Pisgah Rd.	Memphis	38018
NEWBERRY ELEMENTARY SCHOOL	5540 Newberry	Memphis	38118
NORTHAVEN ELEMENTARY SCHOOL	5157 North Circle Rd.	Memphis	38127

OAK FOREST ELEMENTARY SCHOOL	7440 Nonconnah View Cove	Memphis	38135
OAKHAVEN ELEMENTARY SCHOOL	3795 Bishops Bridge	Memphis	38119
OAKHAVEN HIGH SCHOOL	3125 Ladbrook	Memphis	38118
OAKHAVEN MIDDLE SCHOOL	3125 Ladbrook	Memphis	38118
OAKSHIRE ELEMENTARY SCHOOL	1765 E. Holmes	Memphis	38118
OVERTON HIGH SCHOOL	1770 Lanier	Memphis	38117
PEABODY ELEMENTARY SCHOOL	2086 Young	Memphis	38104
RALEIGH-BARTLETT MEADOWS SCH	5195 Twin Woods	Memphis	38134
RALEIGH-EGYPT HIGH SCHOOL	3970 Voltaire	Memphis	38128
RALEIGH-EGYPT MIDDLE SCHOOL	4215 Alice Ann	Memphis	38128
RICHLAND ELEMENTARY SCHOOL	5440 Rich Rd.	Memphis	38120
RIDGEWAY HIGH SCHOOL	2009 Ridgeway	Memphis	38119
RIDGEWAY MIDDLE	6333 Quince Rd.	Memphis	38119
RIDGEWAY/BALMORAL ELEMENTARY	5905 Grosvenor	Memphis	38119
RIVERVIEW MIDDLE SCHOOL	241 Majuba	Memphis	38109
RIVERWOOD ELEMENTARY	1330 Stern Lane	Memphis	38016
ROBERT CHURCH ELEMENTARY NORTH	4100 Mill Branch Rd.	Memphis	38116
ROSS ELEMENTARY SCHOOL	4890 Ross Rd.	Memphis	38141
ROZELLE ELEMENTARY SCHOOL	993 Roland	Memphis	38114
SCENIC HILLS ELEMENTARY SCHOOL	3450 Scenic Hwy.	Memphis	38128
SEA ISLE ELEMENTARY SCHOOL	5250 Sea Isle	Memphis	38117
SHADY GROVE ELEMENTARY SCHOOL	5360 Shady Grove	Memphis	38120
SHARPE ELEMENTARY SCHOOL	3431 Sharpe	Memphis	38111
SHEFFIELD ELEMENTARY SCHOOL	4290 Chuck	Memphis	38118
SHEFFIELD HIGH SCHOOL	4315 Sheffield	Memphis	38118
SHEFFIELD VOC-TECH CENTER	4350 Chuck	Memphis	38118
SHELBY OAKS ELEM SCHOOL	6053 Summer Avenue	Memphis	31834

SHERWOOD ELEMENTARY SCHOOL	1156 Robinhood Ln.	Memphis	31811
SHERWOOD MIDDLE SCHOOL	3480 Rhodes	Memphis	38111
SHRINE SCHOOL	4259 Forestview Dr.	Memphis	38118
SNOWDEN SCHOOL	1870 N. Parkway	Memphis	38122
SOUTH PARK ELEMENTARY SCHOOL	1736 Getwell	Memphis	38111
SOUTHWEST VOC-TECH CENTER	3746 Horn Lake Rd.	Memphis	38109
SOUTHWIND ELEMENTARY SCHOOL	8155 Meadowvale Rd.	Memphis	38125
SOUTHWIND HIGH SCHOOL	7900 East Shelby Dr.	Memphis	38125
TREADWELL ELEMENTARY SCHOOL	3538 Given Ave.	Memphis	38122
TREADWELL MIDDLE SCHOOL	920 N. Highland	Memphis	38122
TREZEVANT HIGH SCHOOL	3350 Trezevant	Memphis	38127
VOLLENTINE ELEMENTARY SCHOOL	1682 Vollintine	Memphis	38107
WASHINGTON HIGH SCHOOL	715 S. Lauderdale	Memphis	38126
WELLS STATION ELEM SCHOOL	1610 Wells Station	Memphis	38108
WESTSIDE ELEMENTARY SCHOOL	3347 Dawn Dr.	Memphis	38127
WESTWOOD HIGH SCHOOL	4480 Westmont	Memphis	38109
WHITE STATION ELEMENTARY SCH	4840 Chickasaw Rd.	Memphis	38117
WHITE STATION HIGH SCHOOL	514 S. Perkins	Memphis	38117
WHITE STATION MIDDLE SCHOOL	5465 Mason Rd.	Memphis	38120
WHITEHAVEN ELEMENTARY SCHOOL	4783 Elvis Presley	Memphis	38116
WHITEHAVEN HIGH SCHOOL	4851 Elvis Presley	Memphis	38116
WILLIAM HERBERT BREWSTER ELEMENTARY SCHOOL	2605 Sam Cooper Blvd.	Memphis	38112
WILLOW OAKS ELEMENTARY SCHOOL	4417 Willow	Memphis	38117
WINCHESTER ELEMENTARY SCHOOL	3587 Boeingshire	Memphis	38116
WINRIDGE ELEMENTARY	3500 Ridgeway Rd.	Memphis	38115
WOODDALE HIGH SCHOOL	5151 Scottsdale	Memphis	38118
WOODSTOCK MIDDLE SCHOOL	5885 Woodstock Cuba	Memphis	38053

	Rd.		
ADMINISTRATIVE ENTITY (MEMPHIS CITY SCHOOL)	160 S. Hollywood	Memphis	38112
ADMINISTRATIVE ENTITY (BOND BLDG)	2930 Airways Blvd	Memphis	38116
ADMINISTRATIVE ENTITY (FARMVILLE WAREHOUSE)	1384 Farmville Rd	Memphis	38112
ADMINISTRATIVE ENTITY (MARTIN LUTHER KING BLDG)	160 S. Hollywood	Memphis	38112
ADMINISTRATIVE ENTITY (NORTH AREA OFFICE)	920 N. Highland	Memphis	38122
ADMINISTRATIVE ENTITY (TEACHING AND LEARNING ACADEMY)	2485 Union Ave	Memphis	38112
CENTRAL NUTRITION CENTER	3176 Jackson Ave	Memphis	38112
GRAYS CREEK ADMIN. BUILDING	2800 Grays Creek Dr	Arlington	38002
MILLINGTON BUS LOT	2800 Grays Creek Dr	Arlington	38002
SHELBY COUNTY SCHOOL DISTRICT BUILDING	160 S. Hollywood	Memphis	38112
SHELBY COUNTY SCHOOLS OPERATIONS CENTER	1384 Farmville Rd	Memphis	38112
SHELBY COUNTY SCHOOLS SPECIAL EDUCATION OFFICE	2930 Airways Blvd	Memphis	38116
SOUTHWEST REGIONAL OFFICE	160 S. Hollywood	Memphis	38112