

Request for Proposal
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ETEC 650
Spring 2006

REQUEST FOR PROPOSAL

Glerum Elementary School is requesting proposals to upgrade data cabling.

Glerum Elementary
342 W. Lakewood Blvd.
Holland, Michigan 49424

The due date for RFP responses is Friday, May 20, 2006, no later than 3:00 p.m.

If you have questions or require clarification, please contact:

Rebecca Lawson – Rebecca.Lawson@tangischools.org

Leslie Cuti – Leslie.Cuti@tangischools.org

All requests for clarification must be made on or before May 13, 2006. A pre-bid meeting will be held on May 10, 2006 at 4:00 p.m. at Glerum Elementary in the Media Center.

UNIFORM PROPOSAL REQUIREMENTS

The following pages represent the uniform requirements that must be met in order to submit proposals (Bids) to Glerum Elementary for the equipment and installations listed.

1.00 ADVERTISEMENT FOR BIDS

1.01 Glerum Elementary will receive proposals (Bids) from qualified contractors for data cabling.

1.02 The bid opening will be at **3:00 p.m. on Friday, May 20, 2006** at the location listed below. All Bids must be received by 3:00 p.m. on May 20, 2006 to be included in the bid opening. No late bids will be considered. Bid responses must be sealed and sent/delivered to the following address: ATTN: Rebecca Lawson
Glerum Elementary
342 West Lakewood Blvd.
Holland, Michigan 49424

1.03 Glerum Elementary School reserves the right to accept or reject any and all Bids. Bid award and purchase of the equipment may be contingent upon successful receipt of USF funds.

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1.04 Bids and proposed solutions will be evaluated on several factors:

- ◆ Prices/Charges
- ◆ Prior Experience
- ◆ Understanding of Needs
- ◆ Financial Stability
- ◆ Personnel Qualifications
- ◆ Completeness of Service Level Agreement
- ◆ Comply with the spirit of the district's long range technology plan. More information regarding this plan can be found at the following website: <http://www.westottawa.net>
- ◆ Provide lower long-term cost of ownership
- ◆ Ability to upgrade and adapt to technological advances
- ◆ Completeness of response and adherence to bid specifications
- ◆ Summary of project implementation plan
- ◆ Capability of the bidder to successfully complete the installation within the required time

frame.

- 1.05 Vendors must participate with the Universal Service Fund operated by the Schools and Libraries Division and provide a proper Service Provider Number (SPIN) on the submitted bid. For information on the Universal Service Fund or the Schools and Libraries Division, visit the website at <http://www.sl.universalservice.org/>.
- 1.06 The specified products are to be provided for Year 9 (July 1, 2006-June 30, 2007). No invoices will be DATED or PAID before July 1, 2006.
- 1.07 The District reserves the unrestricted right to specify the filing option for the universal service discounts for each product offered within the Bid: Billed Entity Applicant Reimbursement (BEAR) or Service Provider Invoice (SPI).
- 1.08 The USF eligible products identified on the USAC Eligible Service List, which is incorporated herein by reference, must be identified separately from any and all "ineligible" products in the Bid.

COMMUNICATIONS WIRING STANDARD

The objective of the standard wiring plan for the Glerum Elementary is to provide an acceptable outlet for any communication device that requires connection to other devices, networks, or information services serving general needs of the school. The establishment of a standard wiring plan will support most communication devices and provide a standard by which buildings should be wired. Renovations and network upgrades should be developed following this standard to provide a uniform connectivity guideline for the whole elementary school.

The purpose of this document is to provide guidelines by which the communications needs of Glerum Elementary School can be met. These guidelines are to be used as a means to provide minimum requirements..

2.0 SCOPE OF WORK AND SYSTEM DESCRIPTION The existing cabling system is a combination cable package (consisting of type I data cable, 4 strands of multimode fiber and category 3 cables) and category 5 cabling. The existing combination cable package will be removed.

The upgraded cabling system shall utilize a network unshielded twisted pair, and station cables. Cables and terminations shall be provided and located as shown and in the quantities indicated on the attached drawings. All cables, including horizontal and patch cables as well as terminations shall be identified at all locations. All copper cable terminations shall comply with, and be tested to TIA/EIA 568B.3 standards for Category 5E installations.

- 2.01 Furnish and install data cable from each jack detailed in attached spreadsheet and as noted on the attached drawings.
- 2.02 a. The current MDF is noted on the attached room layout. Scale building drawings will be forwarded upon request.
 - b. Backboards are to be 3/4" plywood good on one side and painted with flat light colored fire-retarding paint on all sides. All usable walls of MDF will have backboards.
 - c. At the MDF location a double duplex electric outlet will be **provided on a**

- Dedicated circuit** . A 48-inch double tube fluorescent light should be placed above the MDF panel. Incandescent lights may be used as long as a 50-foot candle lighting can be obtained at the MDF panel.
- d. A "ring run" will be provided at the MDF to keep jumper (crosscut) wire organized. This will be accomplished by the use of 4-inch wide aluminum "D" rings screw-mounted above the top of the 66 blocks. The bottom of the "D" ring will be mounted two inches above and centered over the space between each vertical row of blocks. "D" rings should be open or split to allow placement of crosscut wire.
 - e. Wall plates and rack will be labeled according to room number and port.
- 2.03 Furnish, install, and terminate data jacks at each location shown on the drawings.
- 2.04 A minimum of 3 meetings will be held with representatives of the Glerum Elementary to exchange information and agree on details of equipment arrangements and installation interfaces.
- 2.05 Provide "label" for each jack as follows: Room No. – Plate I.D. – X where "X" denotes numerical sequence in each room as noted on plan.
- 2.06 Furnish, install, terminate, and label Cross-Connect Patch Panel (Jack Field) at Main Data Label each "Room" Horizontal Subsystem circuit number to match labels established in item 4 above.
- 2.07 Provide location and labeling plan in frame with clear plastic cover in each MDF and IDF if applicable.
- 2.08 All work specified shall be UL listed and in accordance with the most current . versions of the following codes and agencies:
- A. The National Electrical Code, Article 800
 - B. National Fire Code (N.F.P.A. 72A)
 - C. Life Safety Code (N.F.P.A. 101)
 - D. National Electronic Manufacturer's Association (NEMA)
 - E. Institute of Electronic and Electrical Engineers (IEEE)
 - F. EIA/TIA 568, Commercial Building Telecommunications Wiring Standard which includes EIA/TIA 568A, 569, 607, and TSB 75
- 2.09 a. Data connectivity shall be on 19 inch racks which will be located either in a communication closet or a designated area set aside for network systems equipment. Such has, but not limited to, routers, hubs, switches, fiber terminations, patch panels, and shelves.
- b. Open style data racks shall be 19 inches wide, 84 inches high, and shall meet EIA standards. Racks shall be listed to the UL 1863 Standard for Communication Circuit Accessory. International Connectors and Cable Corporations ICCMSCMR84 or Hubbell CS1976 are strongly recommended for university data connectivity. There must be enough space in the MDF to accommodate 31- inch isle ways. All racks must be grounded to the building ground or bounded to the cable tray system.
- c. Provide a minimum of two drops: per classroom, principal's office, music, art, reading and speech rooms; a minimum of 4 drops for multipurpose room; a minimum of 12 drops in the media center/publishing room/office; and a minimum of 36 drops in the computer room.
- d. If UPS systems are being used AC power must be evenly distributed between UPS and other source of AC power.

- e. Patch panels for relay racks shall be sized to accommodate current project Requirements plus 30% growth capacity. Patch panels shall not exceed 4 x 48 port (maximum total of 192 connections) in a relay rack. Recommended Hubbell UDX48E or equivalent.

2.10

- a. Conduits to communication outlets are to be a minimum of one inch. A dedicated conduit will serve each outlet box. Pull boxes, if needed, must be accessible. Do not place pull boxes above fixed ceilings, HVAC ducts or piping.
- b. No conduit run, without a pull box, is to be longer than 100 feet and no more than two 90- degree bends.
- c. Communication outlet boxes will be H-4 1 1/16" X W-4 1 1/16" X D-2 1/8", equipped with a 2-gang cover/plaster ring. Wall-phone outlets will be equipped with a single-gang cover/plaster ring. The height of these boxes will be determined by the use of the box, keeping in mind that wheelchair access heights vary from project to project and close contact with UNITS will eliminate moving the box.
- d. A cable wire tray may be placed above drop ceilings with the 1-inch communication outlet conduits stubbed to the cable tray from individual room outlets. This tray will provide a path back to the MDF. The tray will have a maximum of 8-inch spacing between cable supports and 4-inch sides. Width of the tray will be determined by the quantity of cables in the tray, and projected growth. Cable Trays and conduits must be properly grounded. All NEC codes for grounding of cable trays will be adhered to. Basket Tray is now acceptable, as long as, it has 4 inch sides.
- e. Access to the MDF is acceptable by either extending the cable tray or providing conduit.
- f. Approved UL fire stop must be used when penetrating fire rated walls or floors

3.00 SUBMITTALS

- 3.01 Manufacturer's Data: Submit manufacturer's standard product data covering data system components (cable and connector system).
- 3.02 Installation Instructions: Submit manufacturer's installation instructions.
- 3.03 Factory Test: Vendor shall submit all factory test information prior to installation. Vendor to interpret test results for compliance with performance requirements.
- 3.04 Material Guarantee: The wiring vendor (installer) shall guarantee at the time of the bid that all Category 5E and Category 5E cabling and components meet or exceed specifications (including installation) of TIA/EIA-568B and 569.
- 3.05 Record Documents: Submit two (2) copies of final labeling plan and labeling spreadsheet. Provide an electronic copy.

4.00 WARRANTY/WARRANTY DOCUMENTATION

- 4.01 System Warranty: Warranty shall provide a complete system warranty to guarantee end-to-end high performance cabling systems that meet application requirements. The guarantee shall include cable and connectivity components and have one point of contact for all cabling system issues. The system shall be warranted for a period of 20 years.
- 4.02 If the manufacturer repairs the product, it may use new or reconditioned replacement parts. If the manufacturer chooses to replace the product, the manufacturer may replace it with a new

or reconditioned one of the same or similar design. Any such repair or replacement will be warranted for either (a) 90 days or (b) the remainder of the original 20-year warranty period, whichever is longer.

4.03 Glerum Elementary reserves the right of cancellation for non-performance of the terms specified in the awarded contract.

5.00 PRODUCTS

5.01 Manufacturers

A. Manufacturers approved:

1. Panduit
2. Ortronics
3. Leviton I
4. Belden Wire and Cable

5.02 MODULAR JACK OUTLETS FOR DATA - PANDUIT MINI-JACK CJ5E88T or equivalent to:

- A. Communications outlets shall consist of one utility outlet box plate equipped with 8-pin modular (RJ-45) jack(s) (quantity per plans) and shall exceed the connector requirements of TIA/EIA Category 5E standard. All outlet cabling shall terminate on termination blocks at their associated IDF.
- B. Belkin RJ-45 termination used in compliance with T568 standard and include a wiring scheme label. The wiring scheme label shall be available with both T568B and T568B wiring schemes.
- C. All terminations for this project shall use the T568B wiring scheme. The jacks shall terminate 4 pair 24 and 22 AWG 100 ohm solid unshielded twisted pair cable. Category 5E modular jacks shall exceed UL or ETL verified Category 5E performance (as defined in TIA/EIA 568-B, TSB 67) and ISO Class 0 performance (as defined in ISO/IEC 11801) in both the basic and channel links. They shall be universal in design, accepting 2, 3, or 4 pair modular plugs without damage to the outer jack contacts. They shall be able to be re-terminated a minimum of 10 times and be available in 11 standard colors for color-coding purposes. They shall snap into all outlets and patch panels.
- D. The Category 5E outlets shall be capable of being in a modular patching situation or as a modular telecommunication outlet (TO) supporting current and evolving high-speed, highbandwidth applications, including Ethernet, 100BASE-T, Token Ring, 100 Mbps TP-PMD, 155 Mbps ATM, 622 Mbps ATM using parallel transmission schemes.
- E. The Category 5E outlets shall be capable of being installed at a 90 percent angle in any modular faceplate, frame, or surface-mounted box avoiding the need for special faceplates.
- F. Data outlet CJ688T -OR voice outlet CJ688T -E 1. G. Factory label 'Analog' or 'Data'.

