

## Invitation to Bid

### 20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE

Responses to an Invitation to Bid will be received by the Purchasing Supervisor, Sumner County Board of Education, 1500 Airport Road, Gallatin, TN 37066 for 20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE until 9:00 a.m. CDT February 24, 2016. Bid responses will be opened at that time, taken under advisement and evaluated. Should you have any questions please contact Chris Brown at [chris.brown@sumnerschools.org](mailto:chris.brown@sumnerschools.org). All proposals are subject to the Board of Education's conditions and specifications which are available from Vicky Currey, Purchasing Supervisor (615) 451-6560. All bids can be viewed on line at [www.sumnerschools.org](http://www.sumnerschools.org).

## NOTICE TO RESPONDENTS

Responses to an Invitation to Bid will be received by the Purchasing Supervisor in the SUPPORT SERVICE FACILITY CONFERENCE ROOM, Sumner County Board of Education, 1500 Airport Road Gallatin, TN 37066. They will be received until **9:00 A.M. Local Time February 24, 2016** for **20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE**, at which time the responses will be opened, taken under advisement and evaluated. ***BIDS WILL BE POSTED ON [www.sumnerschools.org](http://www.sumnerschools.org)***

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### GENERAL REQUIREMENTS AND CONDITIONS

1. The Sumner County Board of Education reserves the right to accept or reject any and/or all responses in whole or in part, and to waive informalities therein.
2. Any responses received after the scheduled closing time for the receipt for responses will not be considered.
3. If a mistake is discovered after the responses are received, only the Sumner County Board of Education may allow the respondent to withdraw the entire response.
4. Partial payments will not be approved unless justification for such payment can be shown. Terms will be net 30 days.
5. Payment will not be made until the said **20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE** are inspected and approved as meeting all specifications by persons appointed by the Sumner County Board of Education.
6. Responses submitted must be in a sealed envelope and marked on the outside as follows:  
**RESPONSE: 20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE DEADLINE: February 24, 2016 @ 9:00 A.M.**
7. Facsimile responses will not be considered.
8. If a successful bidder violates any terms of their bid, the contract, school board policy or any law they may be disqualified from bidding for a period of two years for minor violations or longer for major violations. Bids from disqualified bidders will not be accepted during the period of disqualification.
9. Prices quoted on the response (if any) are to be considered firm and binding until the said **20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE** are in the possession of the Sumner County Board of Education.
10. No purchase or contract is authorized or valid until the issuance of a Board Purchase Order in accordance with Board Policy. No Board Employee is authorized to purchase equipment, supplies or services prior to the issuance of such a Purchase Order.
11. Any deviation from these stated terms, specifications and conditions must be coordinated with and approved in writing by the Purchasing Supervisor, Vicky Currey (615) 451-6560.
12. All bids that exceed \$25,000 must have the Company Name, License Number, Expiration Date thereof and License Classification of Contractor listed on outside of sealed envelope. As required by State of Tennessee Code Annotated 62-6-119.
13. The awarded bidder will be required to post a performance and payment bond in the amount of 25% of the contract price if it exceeds \$100,000 as stated by State of Tennessee Code Annotated 12-4-201.
14. If the project cost in excess of \$25,000 a performance bond must be secured by the requesting party in an amount equal to the market improvement value.

## **Invitation for Competitive Bid**

### **Sumner County School District**

695 E. Main Street  
Gallatin, TN 37066

### **General Bid Specifications**

**Due Date for Bids: 9 AM Central Time on February 24, 2016.**

**Questions should be directed to Chris Brown at [chris.brown@sumnerschools.org](mailto:chris.brown@sumnerschools.org)**

**Questions must be received by 12:00 Noon on February 10, 2016**

**Walkthrough will be (in this order):**

**George Whitten Elementary, Guild Elementary, R T Fisher, Rucker Stewart Middle, Howard Elementary, North Sumner Elementary, Watt Hardison Elementary, Portland East Middle, Clyde Riggs Elementary, Oakmont Elementary at 8:00 AM on Thursday February 4, 2016**

**School floorplans will be given out at the walkthrough or upon request**

**Bids should be sealed and mailed to:**

**Sumner County School District  
ATTN: Vicky Currey – Purchasing Supervisor  
1500 Airport Road  
Gallatin, TN 37066**

Responses submitted must be in a sealed envelope and marked on the outside as follows:

**RESPONSE: 20160224 RE-BID SUMNER COUNTY INFRASTRUCTURE UPGRADE  
DEADLINE: February 24, 2016 @ 9:00 A.M.**

The material and/or services delivered under this proposal shall remain the property of the seller until a physical inspection and actual usage of this material and/or services is accepted to the satisfaction of the County and is to be in compliance with the terms, herein, fully in accord with the specifications and be of the highest quality. In the event the materials and/or services supplied to the County is found to be defective or does not conform to specifications, the County reserves the right to cancel the order upon written notice to the seller and return such product to the seller at the seller's expense.

No RFP may be withdrawn for a period of 90 days after the scheduled time for receiving the proposals. RFPs must be submitted on the forms provided by Sumner County or the proposal will be deemed unacceptable. **BE SURE TO FOLLOW INSTRUCTIONS ON COMPLETING THE SEALED ENVELOPE. SEE FORM ATTACHED.**

As required under the provisions of T.C.A § 50-9-114 this serves as notification that Sumner County operates a Drug Free Workplace Program. Vendors will also be required to submit a Drug Free Workplace Affidavit as required under the provisions of T.C.A § 50-9-113. The affidavit states that employers with five (5) or more employees who contract with either the State or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9. **SEE FORM ATTACHED**

Vendors will be required to submit a Certificate of Compliance with Tennessee Public Chapter 587. TPC587 requires persons, employees of the person or corporation that have direct contact with school children or access to school grounds when children are present to have supplied to the corporation a fingerprint sample and have conducted a criminal history records check by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation prior to permitting the person to have contact with such children or enter school grounds. **SEE FORM ATTACHED.**

The Telecommunications Act of 1996 established a fund by which Schools and Libraries across the Country could access discounts on eligible telecommunications products and services. The program is commonly known as the E-rate Program. The eligibility for discounts on internet access, telecommunications products and services, internal connection products, services and maintenance is determined by the Federal Communications Commission (FCC). Funding is made available upon application approval by the Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC), which was established by the Act. The amount of discount is based on the numbers of students receiving free and reduced price meals. Vendors are required to submit compliance with the E-rate Terms & Conditions. **SEE FORM ATTACHED.**

SUMNER COUNTY TENNESSEE  
TCA 62-6-119  
BID COMPLIANCE FORM

**NOTE: This form MUST be attached to the sealed envelope containing the bid. Failure to provide all of this information on the sealed envelope shall void such bid.**

DELIVER TO: Sumner County School District  
ATTN: Vicky Currey – Purchasing Supervisor  
1500 Airport Road  
Gallatin, TN 37066

BID \_\_\_\_\_

DATE OF BID \_\_\_\_\_ TIME \_\_\_\_\_

**PRIME CONTRACTOR'S IDENTIFICATION**

Name \_\_\_\_\_

Address \_\_\_\_\_

TN License Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Classifications \_\_\_\_\_

**IS ENCLOSED BID LESS THAN \$25,000?**

Yes \_\_\_\_\_ No \_\_\_\_\_

**ITEM I OR II MUST BE COMPLETED IF THE BID EXCEEDS \$25,000**

**I. CONTRACTOR DOES NOT PLAN TO USE SUBCONTRACTORS FOR ANY PART OF THIS PROJECT.**

\_\_\_\_\_  
Signature - Contractors Representative

**II. REQUIRED SUBCONTRACTOR'S IDENTIFICATION  
ELECTRICAL SUB-CONTRACTOR**

Name \_\_\_\_\_

Address \_\_\_\_\_

TN License Number \_\_\_\_\_ Date \_\_\_\_\_

Expiration Date \_\_\_\_\_ Monetary Limit \$ \_\_\_\_\_

Classification \_\_\_\_\_

**HVAC SUB-CONTRACTOR**

Name \_\_\_\_\_

Address \_\_\_\_\_

TN License Number \_\_\_\_\_ Date \_\_\_\_\_

Expiration Date \_\_\_\_\_ Monetary Limit \$ \_\_\_\_\_

Classification \_\_\_\_\_

## DRUG FREE WORKPLACE AFFIDAVIT

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The undersigned, principal officer of \_\_\_\_\_, an Employer of five (5) or more employees contracting with \_\_\_\_\_ County Government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of \_\_\_\_\_ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state of any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9 of the *Tennessee Code Annotated*.
3. The company is in compliance with T.C.A § 50-9-113.

Further affiant saith not.

\_\_\_\_\_  
Principal Officer

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**CERTIFICATION OF COMPLIANCE  
WITH  
TENNESSEE PUBLIC CHAPTER 587**

The General Assembly of the State of Tennessee requires any person, corporation or other entity who enters into or renews a contract with a local board of education comply with Tennessee Public Chapter 587 (TPC587).

TPC587 requires persons, employees of the person or corporation that have direct contact with school children or access to school grounds when children are present to have supplied to the corporation a fingerprint sample and have conducted a criminal history check by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation prior to permitting the person to have contact with such children or enter school grounds.

TPC587 provides guidance for employees who have been convicted of an offense that is classified as a sexual offense or a violent sexual offense.

I have read the attached Tennessee Public Chapter 587 and certify compliance with the regulations.

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Name and address of organization

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Name/title of submitting official (please print)

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Signature

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Date

## E-RATE TERMS AND CONDITIONS

1. The project herein is contingent upon the approval of funding from the Universal Service Fund's Schools and Libraries Program, otherwise known as E-rate.
2. The District expects Service Providers to make themselves thoroughly familiar with any rules or regulations regarding the E-rate program.
3. Service Providers are required to be in full compliance with all current requirements and future requirements issued by the SLD throughout the contractual period of any contract entered into as a result of this RFP.
4. Service Providers are responsible for providing a valid SPIN (Service Provider Identification Number).
5. Service Providers are responsible for providing a valid Federal Communications Commission (FCC) Registration Number (FRN) at the time the bid is submitted.
6. Service Providers are responsible for providing evidence of FCC Green Light Status at the time the bid is submitted. Any potential bidder found to be in Red Light Status will be disqualified from participation in the bidding process and will be considered non-responsive.
7. Products and services must be delivered before billing can commence, but no sooner than April 1, 2016 for E-rate eligible components and services. At no time may the Service Provider invoice before July 1, 2016.
8. Prices must be held firm for the duration of the associated E-rate Funding Year(s) or until all work associated with the project is complete (including any contract and USAC approved extensions).
9. The Service Provider agrees to bill and receive a portion of the payment for the provisions of goods and services described herein directly from USAC via the Form 474 Service Provider Invoice (SPI). The District will only be responsible for paying its non-discounted share of costs and does not intend to use the BEAR process (Form 472). The maximum percentage the District will be liable for is the pre-discount amount minus the funded amount as shown on the FCC Form 471 Block 5 and any identified ineligible costs. Alternatively, should the District decide that it is in the best interest of the District to file a Form 472, the District will inform the Service Provider of its intent.
10. All Service Provider invoicing to USAC must be completed within 120 days from the last day of service. Should the Service Provider fail to invoice USAC in a timely manner, the District will only be responsible for paying its non-discounted share.
11. Service provider shall retain all documentation related to the purchase, payment, delivery and/or installation, including Forms 474 and receipt of payment from USAC, for all products and services provided to the applicant. Related documentation must be retained for a period of 10 years from the last date of service. Even after award of contract(s) and/or E-rate funding approval is obtained, the District may or may not proceed with the project, in whole or in part. Execution of the project, in whole or in part, is solely at the discretion of the District.
12. The awarded Service Provider **must** provide the District a bill of materials using a completed USAC "Item 21 Template" within 2 weeks of the Contract Award Date. Subsequent schedules of values and invoices for each site must match Item 21 Attachment or subsequent service substitutions.



13. In the event of questions during an E-rate pre-commitment review, post-commitment review and/or audit inquiry, the awarded Service Provider is expected to reply within 3 days to questions associated with its proposal.
14. No change in the products and/or services specified in this document orders will be allowed without prior written approval from the district and a USAC service substitution approval with the exception of a Global Service Substitutions.
15. The Service Provider acknowledges that all pricing and technology infrastructure information in its bid shall be considered as public and non-confidential pursuant to §54.504 (2) (i) (ii).
16. The Service Provider acknowledges that its offer is considered to be the lowest corresponding price pursuant to § 54.511(b). Should it not be the lowest corresponding price, the service provider must disclose the conditions leading to the applicant being charged in excess of lowest corresponding price.
17. This offer is in full compliance with USAC's Free Services Advisory. There are no free services offered that would predicate an artificial discount and preclude the applicant from paying its proportionate non- discounted share of costs. The service provider agrees to provide substantiating documentation to support this assertion should the applicant, USAC, or the FCC request it.
18. The awarded Service Provider is required to send copies of all forms and invoices to the District prior to invoicing USAC for pre-approval. Failure to comply with this requirement may result in the District placing the vendor on an "Invoice Check" with the USAC
19. Services providers must comply with the FCC rules for Lowest Corresponding Price ("LCP"). Further details on LCP may be obtained at USAC's website:

I, the undersigned, as an authorized agent of \_\_\_\_\_ (Service Provider Name), hereby certify that I have read the E-rate Terms and Conditions, am fully compliant and intend to cooperate with the E-rate process as outlined above.

**Signature:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Service Provider Name:** \_\_\_\_\_

**Service Provider Identification Number ("SPIN"):** \_\_\_\_\_

## Contracts

All contracts awarded will be contingent upon E-Rate funding and final Board approval unless otherwise noted. The applicant may choose to do all or part of the project upon funding notification.

Contracts for network equipment must state that equipment can be delivered from April 1, 2016 until September 30, **2018**. Purchase (and installation if included) can occur anytime during this period at the contracted prices. Any price fluctuation during the contract term must be identified.

## Method of Award and Evaluation

Award shall be made to the vendor whose proposal is scored with the highest point total based on the Evaluation Criteria detailed below. The evaluation, scoring and award decision of the District shall be final.

The District reserves the right to reject any and all proposals, to contract products and services with whomever and in whatever manner the District decides, to abandon the products entirely, and to waive any informality on non-substantive irregularity as the interest of the District may require.

The District reserves the right to make an award of this proposal any time up to 90 days from the date of proposal opening.

## Evaluation Criteria:

Award of the bid will be based on the following criteria:

Price-Erate Items	30
20 - 30 point for lowest bidders	
10 - 19 points for mid-range	
0 - 9 points for highest bidders	
Price-Other Costs	5
Non-erateable items	
Technical Merit/Completeness of Bid	25
Bid meets the technical needs requested	
Completed all bid requirements	
Prior Experience	20
Similar projects and references	
Experience with this provider	
Personnel Qualifications	10
Staff	
Management	
Responsiveness	10
Responsive to email, walk thrus, etc.	
Proximity of offices	
Local representative available	
<b>Total Points:</b>	<b>100</b>

## Functional Equivalents

Proposals are requested on products that are the functionally equivalent or better than the brands listed below. **References to brand names, trade names, model numbers, or other descriptions are made to establish a required level of quality and functional capabilities and are not intended to exclude other manufacturers.**

Comparable products of other manufacturers will be considered if proof of comparability and compatibility is contained in the proposal. Vendors, if proposing other than specified, are to clearly identify the manufacturer and the model number and must provide written, complete justification as to how the product complies with all specifications outlined within this RFP and how the product integrates with existing devices as well as the complete list of manufacturer published specifications related to the requested products. It shall be the responsibility of the bidders to furnish descriptive literature with their proposal such that specifications, catalog pages, brochures or other data will provide an adequate basis for verifying the quality and functional capabilities of the product offered. Failure to provide this data will be considered valid justification for rejection of the proposal.

## **Warranty**

E-rate rules allow a manufacturer's multi-year warranty for a period up to three years that is provided as an integral part of an eligible component, without a separate identifiable cost, may be included in the cost of the component. Vendors are requested to provide details on warranties.

## **Basic Maintenance of Internal Connections**

Basic Maintenance of Internal Connections (BMIC) is posted on the Form 470 and is only applicable with the Internal Connections solution proposed meeting the RFP requirements. The District is not soliciting separate bids for BMIC.

## **Scope of Work:**

The Sumner County School District is seeking bids to upgrade the switching, wireless access points and cabling in the ten schools listed below. Bidders are requested to complete the attached worksheet, **"Sumner County Bid Form 2016 – Attachment A"**.

**Note that quantities are approximate and may change with final design.**

Proposals are to include the furnishing of all materials, equipment, maintenance, shipping costs, delivery, installation, fees, etc. and the provision of all labor and services necessary or proper for the completion of the work as may be otherwise expressly provided in the contract document. The District will not be liable for any costs beyond those proposed herein.

Sumner County is exempt from all taxes.

## **School Locations**

<b>School</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
CLYDE RIGGS ELEMENTARY	211 FOUNTAIN HEAD RD	PORTLAND	TN	37148
GEORGE A WHITTEN ELEMENTARY	140 SCOTCH ST	HENDERSONVILLE	TN	37075
GUILD ELEMENTARY	1018 SOUTH WATER ST	GALLATIN	TN	37066
HOWARD ELEMENTARY	805 LONG HOLLOW PK	GALLATIN	TN	37066
NORTH SUMNER ELEMENTARY	1485 NORTH SUMNER RD	BETHPAGE	TN	37022
OAKMONT ELEMENTARY	3323 HIGHWAY 76	COTTONTOWN	TN	37048
PORTLAND EAST MIDDLE SCHOOL	604 SOUTH BROADWAY	PORTLAND	TN	37148
R T FISHER ALTERNATIVE	455 NORTH BOYERS	GALLATIN	TN	37066
RUCKER STEWART MIDDLE	350 HANCOCK ST	GALLATIN	TN	37066
WATT HARDISON ELEMENTARY	300 GIBSON ST	PORTLAND	TN	37148

# **Sumner County BOE Voice and Data Technical Specification**

## **PART 1- GENERAL**

### **1.1 SCOPE**

- A. This document defines the products and the execution requirements required to furnish and install a complete distribution system utilizing a structured cabling system.
- B. All cables and related terminations, support and grounding hardware shall be furnished, installed, tested, labeled, and documented by the structured cabling contractor as detailed in this document.
- C. The distribution system shall be all-inclusive and represent a complete installation at the sites shown on the attached drawings and in the attached specifications. The Vendor shall be responsible for all parts, labor, and all other associated apparatus necessary to completely install, test and turnover for acceptance by the Sumner County BOE the cabling system detailed herein by.
- D. Product specifications and general design considerations are provided in this document. Quantities of telecommunication outlets, typical installation details, cable routing and outlet types are indicated on the plans.
- E. The contractor shall include a **Bill of Materials** and **Scope of Work** with each bid. Sumner County BOE desires a quality Category 6e Panduit General or equivalent solution with a 25 year warranty for the voice and data infrastructure network.

### **1.2 APPLICABLE STANDARDS**

- A. Vendor performance of the work shall comply with all applicable federal, state, and local laws, rules, and regulations. The vendor shall give required notices, and procure necessary governmental licenses and inspections, and shall pay without burden to the Customer, all fees and charges in connection therewith unless specifically provided otherwise. In the event of violation, The Vendor shall pay all fines and penalties including attorney's fees, and other defense cost and expenses in connection therewith.
- B. Federal Communication Commission. Equipment requiring FCC registration or approval shall have received such approval and shall be appropriately identified.
- C. Codes, Standards and Ordinances
  - a. All work shall conform to the latest edition of the *National Electrical Code*®, the Building Code, and all local codes and ordinances, as applicable. ANSI/TIA/EIA-568-B.1 through ANSI/TIA/EIA-568-B.3, TIA-569-B, TIA/EIA-606-A, ANSI-J-STD-607-A, NECS/BICSI-568-2006, nema 250, NEC Articles 770 and 800, ADA Americans with Disabilities ACT, and shall be adhered to during all installation activities. Methodologies outlined in the latest edition of the BICSI *Telecommunications Distribution Methods Manual* shall also be used during all installation activities. Should conflicts

exist with the foregoing, the authority having jurisdiction for enforcement will have responsibility for making interpretation.

- D. If this document and any of the documents listed above are in conflict, then the more stringent requirements shall apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release.
- E. This document does not replace any code, either partially or wholly. The contractor must be aware of local codes that may impact this project. All local, State and federal codes are to be followed.
- F. All materials shall be UL Listed and shall be marked as such. If UL has no published standards for a particular item, then other national independent testing standards shall apply.

### 1.3 WARRANTY

- A. The contractor shall provide a PanGen (or equivalent) warranty to guarantee an end-to-end high performance cabling system that meets 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 at least 25 years.
- B. Materials and workmanship hereinafter specified and furnished shall be fully guaranteed by The Vendor for one *year* from transfer of title against any defects. Defects which may occur as the result of faulty materials or workmanship within *one year* after installation and acceptance by the Sumner County BOE shall be corrected by The Vendor at no additional cost to Sumner County BOE. The Vendor shall promptly, at no cost to Sumner County BOE, correct or re-perform (including modifications or additions as necessary) any nonconforming or defective work within *one year* after completion of the project of which the work is a part.

### 1.4 APPROVED CONTRACTOR

- A. The structured Cabling Contractor must meet the following requirements:
- B. The Cabling Contractor performing work must be a current, approved, and Certified **Panduit or equivalent** Contractor in order to provide the **required 25 year manufacturer's warranty. No sub-contractors allowed without prior approval from the Sumner County BOE.**
- C. The selected Vendor shall be fully capable and experienced in the structured cabling system specified. To ensure the system has continued support, the Sumner County BOE will contract only with Vendors having a successful history of sales, installation, service, and support. During the evaluation process, the Sumner County BOE may, with full cooperation of The Vendors, visit The Vendors' places of business, observe operations, and inspect records. The Vendor must have a minimum of *three (3) years* of experience in structured cabling.

- D. REFERENCES The Sumner County BOE may, with full cooperation of The Vendors, visit client installations to observe equipment operations and consult with references. Specified visits and discussion shall be arranged through The Vendors; however, The Vendor personnel shall not be present during discussions with references. The Vendor must provide a minimum of three (3) reference accounts at which similar work, both in scope and design, have been completed by The Vendor within the last three (3) years.
- E. SAFETY -The Vendor shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the work. The Vendor shall at all times comply with the regulations set forth by federal, state, and local laws, rules, and regulations concerning “OSHA” and all applicable state labor laws, regulations, and standards.

## 1.5 INSTALLATION GUIDELINES

- A. All work performed on this project will be installed in accordance with the current edition of the National Electrical Code®, the current edition of the National Electrical Safety Code® the current issue of the National Electrical Code®, the ANSI/NECA/BICSI-568-2006 Standard for Installing Commercial Building Telecommunications Cabling, the current edition of the BICSI Telecommunications Distribution Methods Manual, the current edition of the BICSI Cabling Installation Manual, the latest issue of the ANSI/TIA/EIA Standards as published by Global Engineering Documents as ANSI/TIA/EIA Telecommunications Building Wiring Standards, and all local codes and ordinances.
- B. Section Includes : Equipment, materials, labor, and services to provide telephone and data distribution system including, but not limited to:
- 1) Furnish and install a complete telecommunications wiring infrastructure.
  - 2) Furnish, install, and terminate all UTP and Optical fiber cable.
  - 3) Furnish and install all wall plates, jacks, and patch panels as described.
  - 4) Furnish and install all required cabinets and/or racks as required and as indicated.
  - 5) Furnish any other material required to form a complete system.
  - 6) Perform testing (100% of horizontal and/or backbone links) and certification of all components.
  - 7) Furnish test results of all cabling to the owner on disk and paper format, listed by each closet, then by workstation ID.
  - 8) Provide owner test results and documentation. (Testing documentation and as-built drawings).

- C. Provide all equipment, materials, labor, and services, not specifically mentioned or shown, which may be necessary to complete or perfect all parts of the installation. Ensure that they are in compliance with requirements stated.

## 1.6 SUBMITTALS

- A. Within fifteen (15) days of notice to proceed the structured cabling contractor shall submit the following:
  - 1. Panduit or equivalent certification of the company and names of staff that will be performing the installation and termination to provide proof of compliance of this spec.
  - 2. Submit appropriate cut sheets and samples for all products, hardware and cabling.
  - 4. Submit 1/8" = 1'-0" drawings of floor plans and indicating all work outlets and labeling designation for each jack.
  - 5. Submit 1/2" = 1'-0" drawings of each MDF and each IDF showing all racks, patch panels, wire management, equipment tray,, etc.
- B. Work shall not proceed without the Owner's approval of the submitted items.
- C. The structured cabling contractor shall receive approval from the Sumner County BOE on all substitutions of material. **No substituted materials shall be installed except by approval from Sumner County BOE.**

## 1.7 DRAWINGS

- A. It shall be understood that the electrical details and drawings provided within the specification package are diagrammatic. They are included to show the intent of the specification and to aid the structured cabling contractor in bidding the job. The structured cabling contractor shall make allowances in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.
- B. The structured cabling contractor shall verify all dimensions at the site and be responsible for their accuracy.
- C. Federal, State and local codes, rules regulations, and ordinances governing the work, are fully part of the specifications as if herein repeated or hereto attached. If the contractor should note items in the drawings or specifications, construction of which would be code violations, promptly call them to the attention of the University of Tennessee representative in writing. Where the requirements of other sections of the specification are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.

## PART 2- PRODUCTS

### 2.1 EQUIVALENT PRODUCTS

- A. Due to the nature and type of communications network desired Sumner County BOE has decided upon a Panduit General or equivalent Category 6e solution for our voice and data infrastructure network.
- B. All copper and fiber connectivity products, including but not limited to patch panels, jacks, connectors, wire management, and faceplates, shall be manufactured by **Panduit or equivalent**.
- C. All copper cable shall be manufactured by **General Cable or equivalent**.
- D. All fiber optical cable shall be manufactured by **General Cable or equivalent**.

### 2.2 Scope of Work

- A. Sumner County BOE desires a PanGen (or equivalent) Category 6e solution.  
**Electrical Value Guaranteed Link Headroom over TIA/EIA Category 6 at 250 MHz.**

- 1. Insertion Loss 5%
- 2. NEXT 4.5 dB
- 3. PSNEXT 5 dB
- 4. ACR 5.5 dB
- 5. PSACR 7.5 dB
- 6. ELFEXT 6 dB
- 7. PSELFEXT 8 dB
- 8. Return Loss 2 dB

\*Electrical values are above the specified standards and consist of worst pair margin per ANSI/TIA/EIA 568 C.2 Category 6.

- B. All data and voice cables shall be **Blue** and modular jacks shall be **Orange** in color unless otherwise indicated on prints.
- C. The wiring scheme shall be T568A unless otherwise indicated on prints.
- D. All horizontal cables, jack modules, patch cords shall be designed to support Category 6e applications.
- E. Install appropriate lightning protection for any copper communication cable that enters or leaves the building that is susceptible to lightning that is installed under this contract.



- F. The contractor shall terminate all jack modules in each patch panel by color as indicated on prints. The mixing of colors in the same patch panel will not be allowed. The customer desires to separate each network type by color. All modular patch panels installed shall be 48 or 24 port. Confirm exact placement of patch panels with customer prior to installation.
- G. Furnish and install a minimum Panduit or equivalent 12" communication cable basket tray from each floor mount rack/server cabinet to wall. Furnish and install a minimum Panduit or equivalent 12" communication cable basket tray around the walls as required to support cables unless otherwise indicated on prints.
- H. Furnish and install vertical cable management on each side and between each floor mount rack. Furnish and install covers on all vertical wire management.
- I. The use of ty-wraps or plastic cable ties will not be allowed in telecommunication closets. The contractor shall use Panduit or equivalent's TAK-TY's hook and loop nylon fabric ties.
- J. Furnish and install a minimum of one (12) twelve strand multi-mode OM4 50/125 fiber from MDF to each IDF unless otherwise indicated on prints.
- K. Furnish and install all fiber in 19" rack mount fiber patch panel. Install fiber patch panel in top position of data cabinet. Where voice and data cables are installed in the same rack install fiber in top position.
- L. Furnish and install all voice and data cabling in 7ft floor mount Racks unless otherwise noted on prints.
- M. Furnish and install a Telecommunication Grounding Busbar in MDF and each IDF and ground equipment per NEC and EIA/TIA standards.
- N. Furnish and install (1) one rack mount horizontal power strip in each rack.
- O. Coordinate exact placement of racks with customer prior to installation.
- P. Furnish and install all OSP copper and fiber products as required either called out specifically or omitted to provide a complete working structured cabling system. Unless otherwise indicated on the prints.
- Q. All switches, hubs, routers, electronics, and phone system provided by others in a separate contract unless otherwise indicated on prints or specifically called out for in bid document.
- R. Furnish and install 4ft wall mount rack(s) in IDF and install heavy duty Swing gate kit on each wall mount rack(s) only where space does not allow for floor mount rack. Unless otherwise indicated on prints.

S. Close out documents:

1. Provide (3) copies of As built's in hard copy and (1) copy Auto Cad format listing each cable number.
2. Provide Test documentation in hard copy and in electronic format.

2.3 APPROVED PRODUCTS

- Connectivity : Panduit or equivalent
- Horizontal Cable: General Cable or equivalent
- Fiber and Backbone Cable: General Cable or equivalent
- Outside Plant Copper : General Cable or equivalent

A. Voice/ Data jacks / Video

1. Mini-Com TX6™ Category 6 Jack Modules. The eight position modules shall be used in all work areas and in all Modular Patch Panel Frames. Terminations shall be accomplished by use of a forward motion termination cap and shall not require the use of a punch down tool. The termination cap shall provide strain relief on the cable jacket, ensure cable twist and are maintained to within 1/8" and include a wiring scheme label.
2. All terminations shall be T568 (B) for this project unless directed otherwise by customer.

Approved Product Panduit or  
equivalent CJ6X88TGBU  
CJ6X88TGWH

B. Faceplates

Approved Products:

- a) Panduit or equivalent
  1. CFPL2XXY
  2. CFPL4XXY.
  3. CFFPL4, Flat,

C. Patch Panel (Data)

1. Angled modular Patch Panel design.
  - . Panduit or equivalent
    1. Angled 48 port patch panel – CPPA48FMWBLY
    2. Angled 24 port patch panel – CPPA24FMWBLY

D. Blank Filler Plate

1. Panduit or equivalent  
**CPAF1BLY**

E. Pathways

1. Approved product

- i. Panduit or equivalent J-Hooks

F. Rack System

- 1. Approved Product (Panduit or equivalent,CPI)

H. Horizontal & Horizontal Wire Management

- 1. Cable management shall be provided using the PatchLink or NetManager Horizontal Cable Management System.
  - i. Approved Product Panduit or equivalent (or approved)
    - 1. NM1, NM2, NM3 or NM4 Front & Rear
    - 2. WMP1E, WMPH2E Front & Rear
    - 3. PRV6,8,10,12
    - 4. PRD6,8,12

I. Telecommunication Grounding Busbar and Accessories

Panduit or equivalent

- 1. GB4B0624TPI-1 TMGB
- 2. GB2B0312TPI-1 TGB

J. Fiber Enclosures

- 1. Approved Panduit or equivalent  
Rack mount enclosure (FRME1U, FRME2U)

K. Fiber Cabling

- 1. Approved General Cable or equivalent interlocked Armor OFNP 12F  
MM 50um OM4 fiber (BL00121PNU-IPLA)
- 2. Approved General Cable (or equivalent) interlocked Armor OFNP 12F  
SM 50um OM4 fiber (AP00121PNU-IPLA)

L. Horizontal Cabling System

- 1. Copper UTP Horizontal Cable
- 2. Approved Product
  - i. General Cable (or equivalent)
    - 1. GS6000e CMP for Data (7131900) Blue
    - 2. GS6000e CMP for Voice (7131901) White
    - 3. GS6000e CMR for Data (7133900) Blue
    - 4. GS6000e CMR for Voice (7133901) White

### 3.1 GROUNDING AND BONDING

- A. The facility shall be equipped with a Telecommunications Building Backbone (TBB). This backbone shall be used to ground all telecommunications cable shields,

equipment racks, cabinets, raceway, and other associated hardware that has potential to act as a current carrying conductor. The TBB shall be installed independent of the building's electrical and building ground and shall be designed in accordance with the recommendations contained in the ANSI/TIS/EIA 607 Telecommunications Building and Grounding Standard.

- B. The main entrance facility/equipment room in each building shall be equipped with a telecommunications main grounding bus bar (TMGB). Each Telecommunications room shall be provided with a telecommunications ground bus bar (TGB). The TMGB shall be connected to the building electrical entrance grounding facility. The intent of this system is to provide a grounding system that is equal in potential to the building electrical ground system. Therefore, ground loop current potential in minimized between telecommunication equipment and the electrical system to which is attached.
- C. All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering in the TR or ER shall be grounded to the respective TGB or TMGB using a #6 AWG stranded copper bonding conductor and compression connectors. Panduit or equivalent part no. RGCBNJ660P22
- D. All wires used for telecommunications grounding purposes shall be identified with a green insulation. Non-Insulated wires shall be identified at each termination point with a wrap of green tape. All cables and bus bars shall be identified and labeled in accordance with the System Documentation Section of this Specification.

#### 4.1 FIRESTOP

- A. A firestop system is comprised of the items penetrating the fire rated structure, the opening in the structure and the materials and assembly of the materials used to seal the penetrated structure. Firestop systems comprise an effective block for fire, smoke, heat, vapor and pressurized water stream.
- B. All penetrations through fire-rated building structures (walls and floors) shall be sealed with an UL Listed firestop system. This requirement applies to through penetrations (complete penetrations) and membrane penetrations (through one side of a hollow fire rated structure). Any penetrating item i.e. riser slots and sleeves, cables, conduit, cable tray and raceway, etc shall be properly firestopped.

#### 5.1 EXECUTION

- A. Cables shall be coiled in the in-wall or surface-mount boxes if adequate space is present to house the cable coil without exceeding the manufactures bend radius. In hollow wall installations where box-eliminators are used, excess wire can be stored in the wall. **No more** than 12" of UTP and 36" of fiber slack shall be stored in an in-wall box, modular furniture, raceway, or insulated walls. Excess slack shall be loosely coiled and stored in the ceiling above each drop location when there is not enough space present in the outlet box to store slack cable.
- B. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B.1 document, manufactures recommended and best industry practices.
- C. Pair untwist at the termination shall not exceed 12mm (one-half inch).
- D. Bend radius of the horizontal cable shall not be less than 4 times the outside diameter
- E. The cable jacket shall be maintained to within 25mm of the terminating point.
- F. Data jack unless otherwise noted in drawings, shall be located in the bottom position (s) of each faceplate. Data jack in horizontally oriented faceplates shall occupy the right-most position (s).

## 5.2 HORIZONTAL DISTRIBUTION CABLE INSTALLATION

- A. All wiring above ceilings or below raised floor shall be installed in cable tray or open top cable hangers or in provided conduit.
- B. Cable above accessible ceiling shall be supported 3 ft on center from cable support attached to building structure.
- C. The contractor shall be responsible for replacing all cables that do not pass appropriate cabling standards for which the equipment is designed.
- D. Maximum horizontal cable length 90 meters.
- E. Cable shall have no physical defects such as cuts, tears or bulges in the outer jacket. Cables with defects shall be replaced.
- F. Install cable in neat and workmanlike manner. Neatly bundle and tie all cables in closets. Leave sufficient cable for 90° sweeps at all vertical drops.
- G. Test, label and document as called for in the contract documents.

## 5.3 GROUNDING SYSTEM

- A. The TBB shall adhere to the recommendations of the ANSI/TIA.EIA-607 standard, and shall be installed in accordance with best practices.
- B. Installation and termination of the main bonding conductor to the building service entrance shall be performed by the electrical contractor.

## 5.4 RACKS

- A. Racks shall be securely attached to the concrete floor using minimum 3/8" hardware or as required by codes.
- B. Racks shall be placed with a minimum of 36 inch clearance from the walls on at least one side of the racks. When mounted in a row, maintain a minimum of 36 inches from the wall behind and in front of the row of racks.
- C. All racks shall be grounded to the telecommunications ground bus bar.
- D. Rack mount screws not used for the installing patch panels and other hardware shall be bagged and left with the rack upon completion of the installation.
- E. Wall mounted termination block fields shall be mounted on 4' x 8' x .75 void free plywood. The plywood shall be mounted vertically 12" above finished floor. The plywood shall be painted with two coats of grey fire retardant paint.

## 6.1 IDENTIFICATION AND LABELING

- A. The contractor shall develop and submit for approval a labeling system for the cable installation. At a minimum, the labeling system shall clearly identify all components of the system, racks, cables, panels, and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the

cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.

- B. All label printing will be machine generated. No hand written labels will be allowed. Self laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on or in the space provided on the device.

## 7.1 TESTING AND ACCEPTANCE

- A. All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements ANSI/TIA/EIA-568-B. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be replaced in order to ensure 100% useable conductors in all cables installed.
- B. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards and best industry practice. If any of these are in conflict, the contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.
- C. All copper and fiber optic testing shall comply with the Panduit or equivalent warranty testing requirements.
- D. Where any portion of system does not meet the specifications, correct deviation and repeat applicable testing at no additional cost to the Sumner County BOE.

## 7.2 SYSTEM DOCUMENTATION

- A. Upon completion of the installation, the structured cabling contractor shall provide three (3) full documentation sets to the owners for approval. Documentation shall include the items detailed in the sub-sections below.
- B. Documentation shall be submitted within ten (10) working days of the completion of each testing phase (e.g. subsystem, cable type, area, floor, etc) this is inclusive of all test results and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 working days of the completion of each testing phase. At the request of the engineer, the structured cabling contractor shall provide copies of the original test results.
- C. Sumner County BOE may request that a 10% random field re-test be conducted on the cable system at no additional cost, to verify documented findings. Test shall be a repeat of those defined above. If findings contradict the documentation submitted by the structured cabling contractor, additional testing can be requested to the extent

determined necessary by the Sumner County BOE, including 100% re-test. This re-test shall be at no additional cost to Sumner County BOE.

### 7.3 TEST RESULTS

- A. Test documentation shall be provided on disk within three weeks after completion of the project. The disk shall be clearly marked on the outside front cover with the words "Sumner County BOE (name of the project)" and the date of completion.(month and year) The test results shall include a record of test frequencies, cable type, conductor pair and cable (outlet) I.D, measurement direction, reference setup, and crew member name (S). The test equipment name, manufacturer, model number, serial number, software version and latest calibration date will be provided at the end of the document. The test document shall detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.

### 8.1 AS-BUILT DRAWINGS

- A. The drawings are to include cable routes and outlet locations. Outlet locations shall be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. Sumner County BOE will provide floor plans in paper and electronic (DWG, AutoCAD Rel 2002) formats on which as-built construction information can be added. These documents will be modified accordingly by the structured cabling contractor to denote as-built information as defined above and returned to the Sumner County BOE.
- B. The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and electronic (AutoCAD rel. 2003 form).

### 8.2 WARRANTY

- A. The Vendor shall provide a 25 year extended product warranty with a 25 year application assurance warranty. The Vendor shall provide warranty directly to Sumner County BOE.
- B. A PanGen (or equivalent) Extended Product Warranty shall be provided which warrants functionality of all components used in the system for 25 years from the date of registration. The Extended Product Warranty shall warrant the installed horizontal copper and the backbone optical fiber portions of the cabling system.
- C. The Application Assurance Warranty shall cover the failure of the wiring system to support current or future applications that are designed for the link/channel specifications of the ANSI/TIA/EIA-568-B.1. These applications include, but are not limited to, 10 BASE-T, 100BASE-T, 1000BASE-T.
- D. The contractor shall provide a warranty on the physical installation

### 8.3 FINAL ACCEPTANCE & SYSTEM CERTIFICATIONS

- A. Completion of the installation, in-progress and final inspections, receipt of the test and as-built documentation, and successful performance of the cabling system for a two week period will constitute acceptance of the system. Upon successful completion of the installation and subsequent inspection, the end user shall be provided a numbered certificate, from The Vendor, registering the installation.

# **Sumner County BOE Voice and Data Technical Specification**

Questions contact:

## **Sumner County BOE**

### Questions and Answers

- 1) The technical specs outline an OM4 fiber backbone solution. An OM3 fiber backbone will support 10gig transmission from MDF to IDF(s) up to 330 meters (over 1000' ft). The OM4 fiber optic cable outlined in the technical specification will be twice the cost to the customer as OM3 fiber. Is the end goal to support a 10gig backbone via OM3 Fiber or is the end goal to implement OM4 fiber?  
10 gig is the end goal
- 2) How many strands of fiber optic cable are to be provided between each MDF and IDF called out?  
The technical specs call for 12 strands each where-as the RFP spreadsheet does not call out a strand count.  
6 strand between MDF and IDFs is sufficient.
- 3) The technical specs outline, by part number, a Cat6e solution. The RFP spreadsheet states that Cat6 cabling and connectors are to be used. The cost of the Cat6e solution will almost double compared to a Cat6 solution. Is a Cat6e solution to be implemented or Cat6?  
Cat 6 or 6e.
- 4) The technical specs outline, by part number, al horizontal and vertical wire management to be used in MDFs and IDFs. The RFP spreadsheet states that no horizontal or vertical wire management is to be utilized in the MDFs or IDFs. Should horizontal and vertical wire management be incorporated into the solution?  
No horizontal wire management needed.
- 5) The number of connectors listed for each building do not directly correlate to the number of Cat6 cables identified in the same building. Please identify: How many cables are to be installed in each building.  
Please refer to the drawings and spreadsheet in the RFP. Should be 8 drops per room. 2 in ceiling.  
With the exception of Gyms, Cafeterias (they will only need drops for Access Points).  
  
A: How many cables will require connectors on both ends?  
All cables will require connectors on both ends.  
  
B: How many patch cables are required for each cable run?  
1 for each run at patch panel.  
  
C: How long are the patch cables to be?  
1 foot cat6/cat6e
- 6) The RFP spreadsheet states that for each classroom, "2 drops in ceiling with long maintenance loop," where-as the other 6 drops in each classroom are called out "2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with



single gang box and 4 modular CAT 6 jacks.” Should the contractor assume that for the “2 drops in ceiling with long maintenance loop,” modular Cat6 jacks will not be required? If so, please note that the technical specification call for a 25 Year Manufacturer’s Warranty is to be included in the pricing, but a manufacturer’s warranty can only be applied for once end to end test reports have been sent in for each cable certifying that cable. You cannot certify cables that do not have a connector on each end. Please clarify if “2 drops in ceiling with long maintenance loop” in each classroom are to be left un-terminated on either or both ends.

These need to be terminated on each end.

- 7) Do we want engineering, network design, heat mapping, and verification of the new Wi-Fi deployment?

Yes, this should include infrastructure drawings.

IDF, can be moved/relocated from where they currently exist, if another location makes for sense (cable pull lengths, etc.).

#### Specific Fiber Needs

Guild Elementary:

Will need 1 or 2 fiber runs, depending on IDF relocations.

R.T. Fisher:

Will need 1 fiber run.

Rucker Stewart Middle:

No New fiber needed.

Howard Elementary:

Will need 1 fiber run.

George Whitten Elementary:

May need 1 fiber run, if a new IDF is needed.

North Sumner Elementary:

Will need 1 fiber run, for relocated IDF.

Watt Hardison Elementary:

May need 1 fiber run if a new IDF is needed.

Portland East Middle:

Will need 1 fiber run.

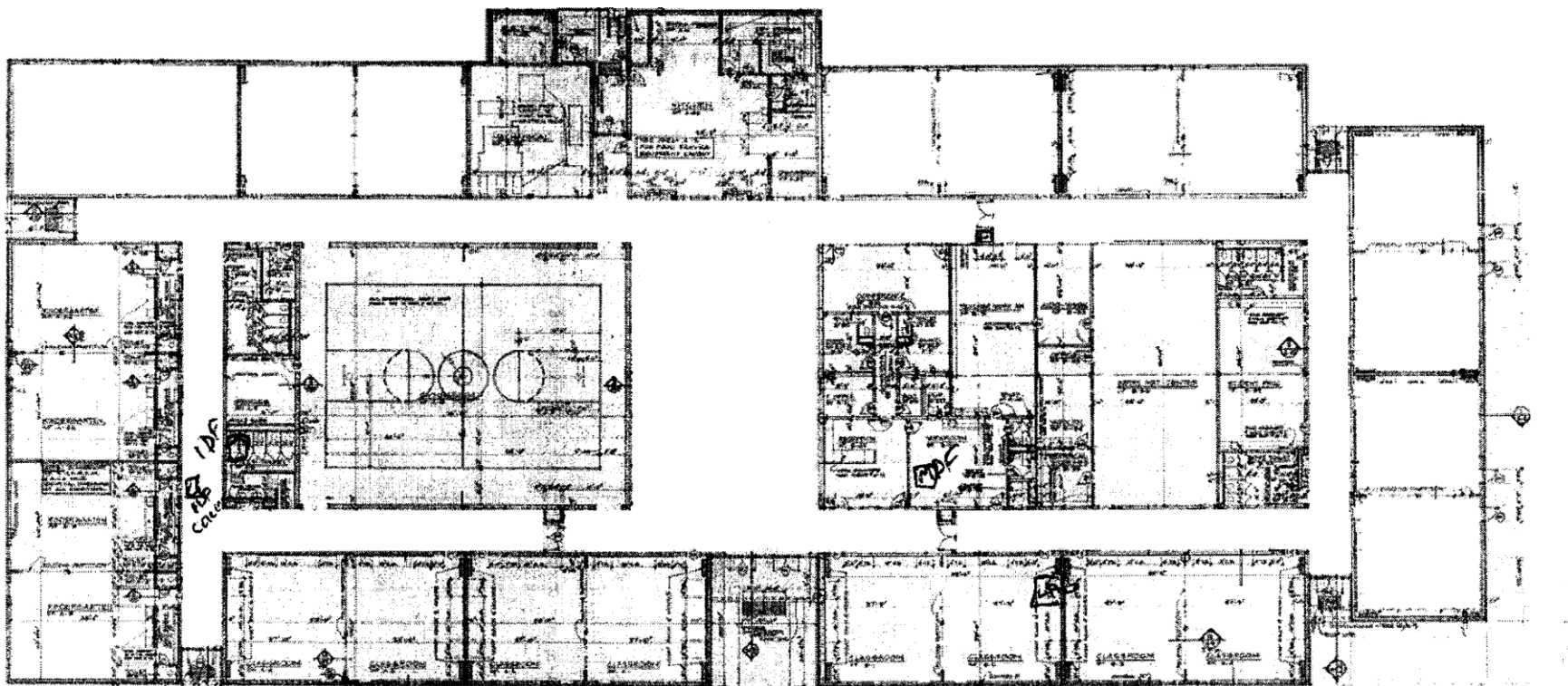
Clyde Riggs Elementary:

No fiber needed.

Oakmont Elementary:

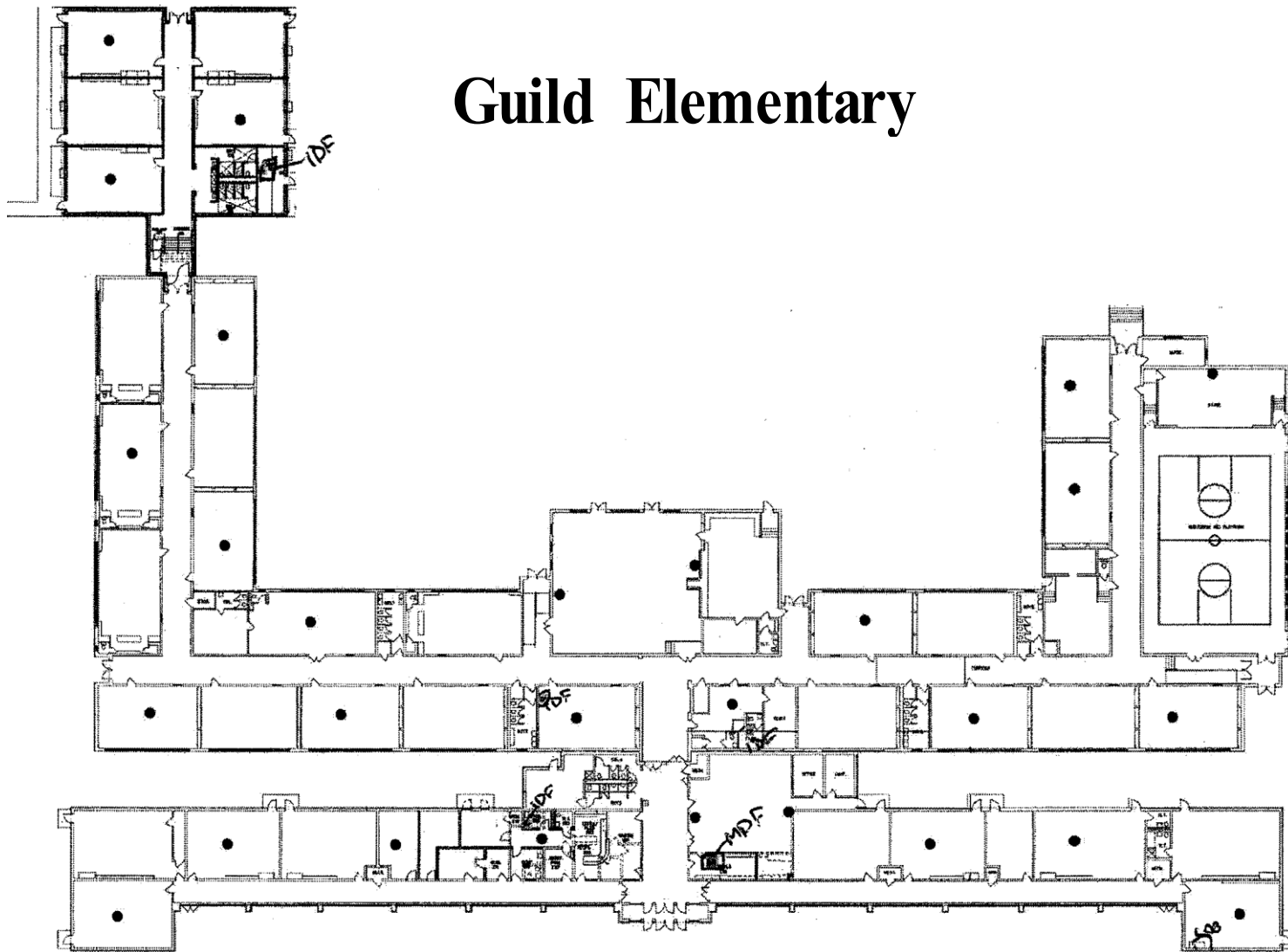
No fiber needed.

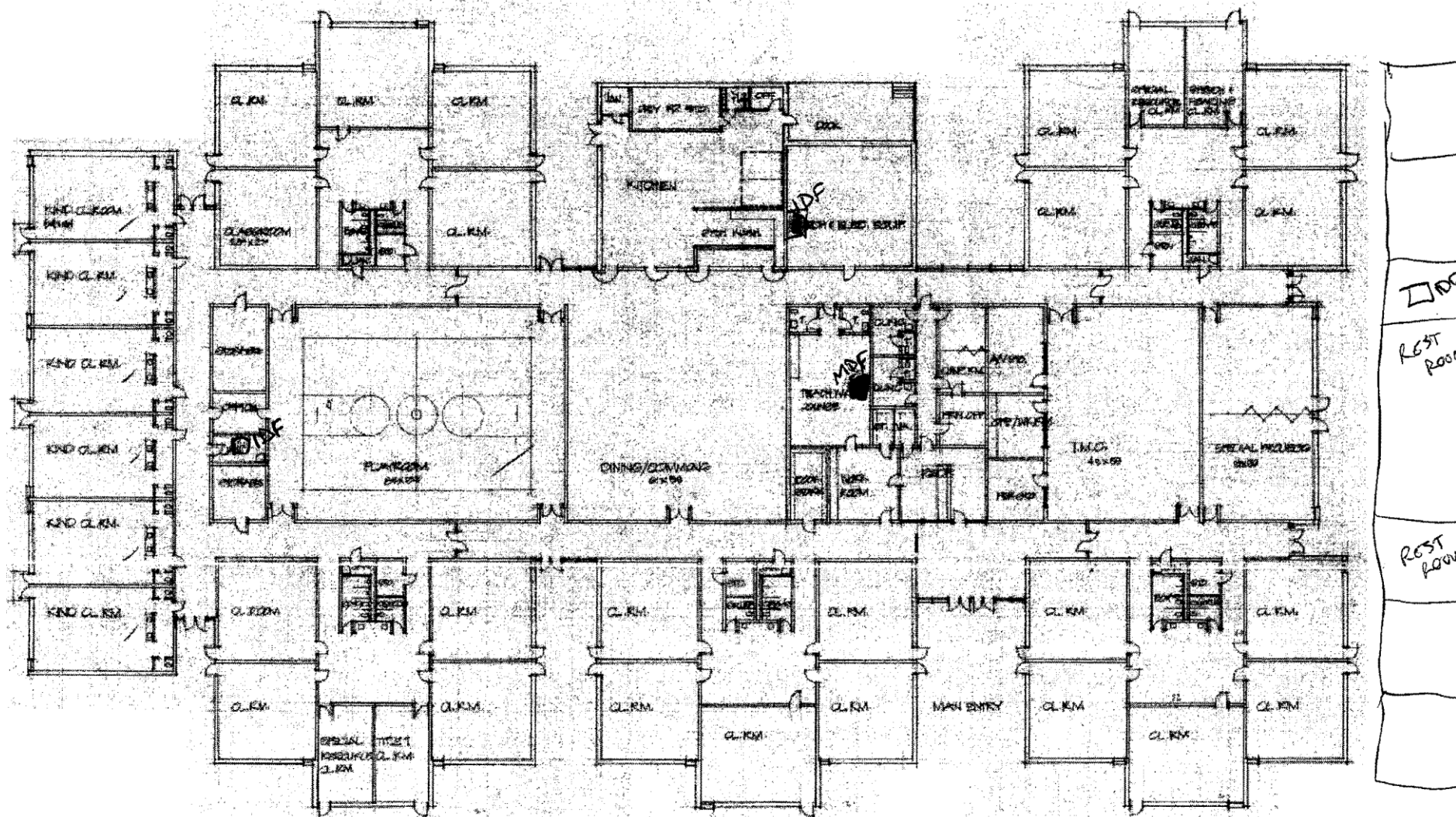




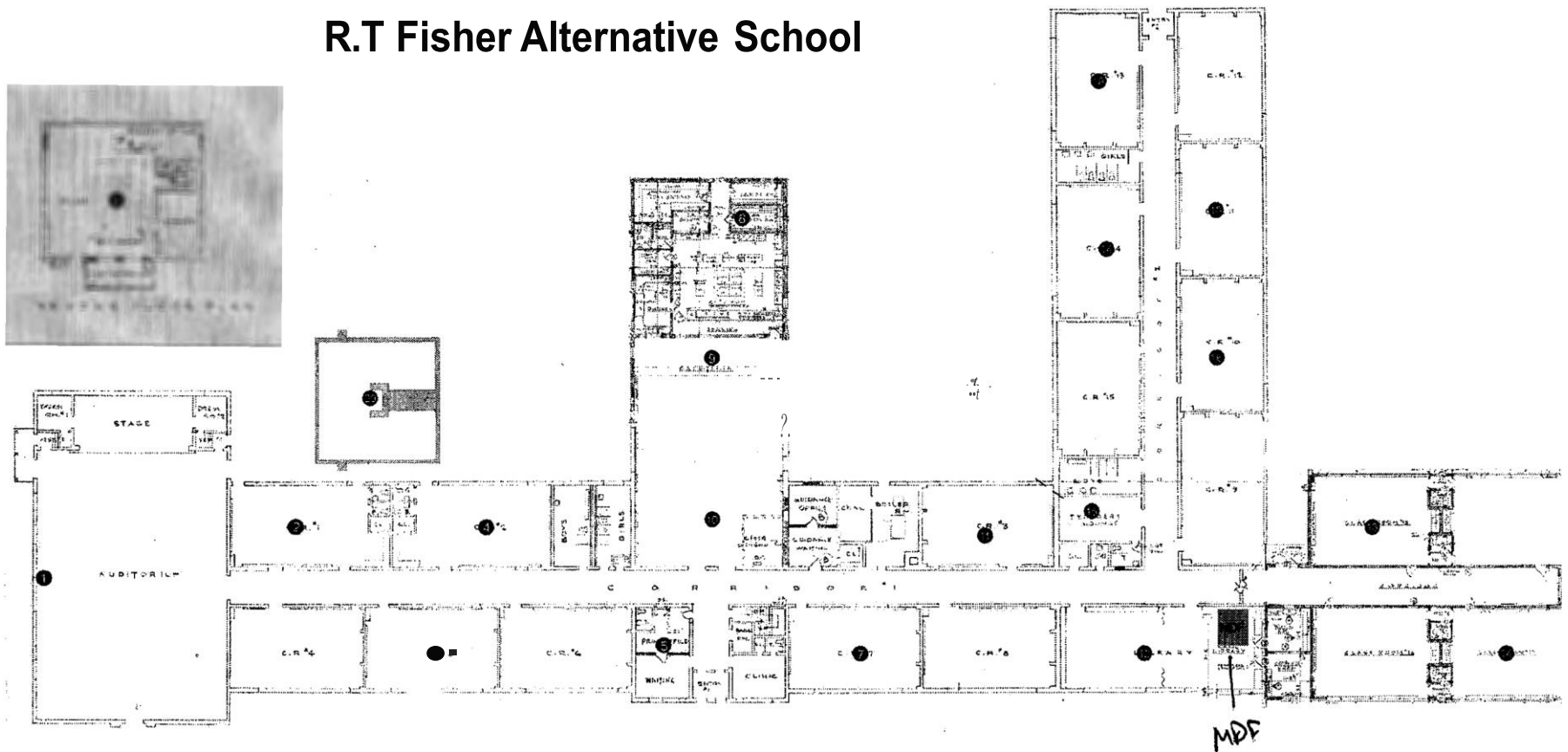
# George Whitten Elementary

# Guild Elementary

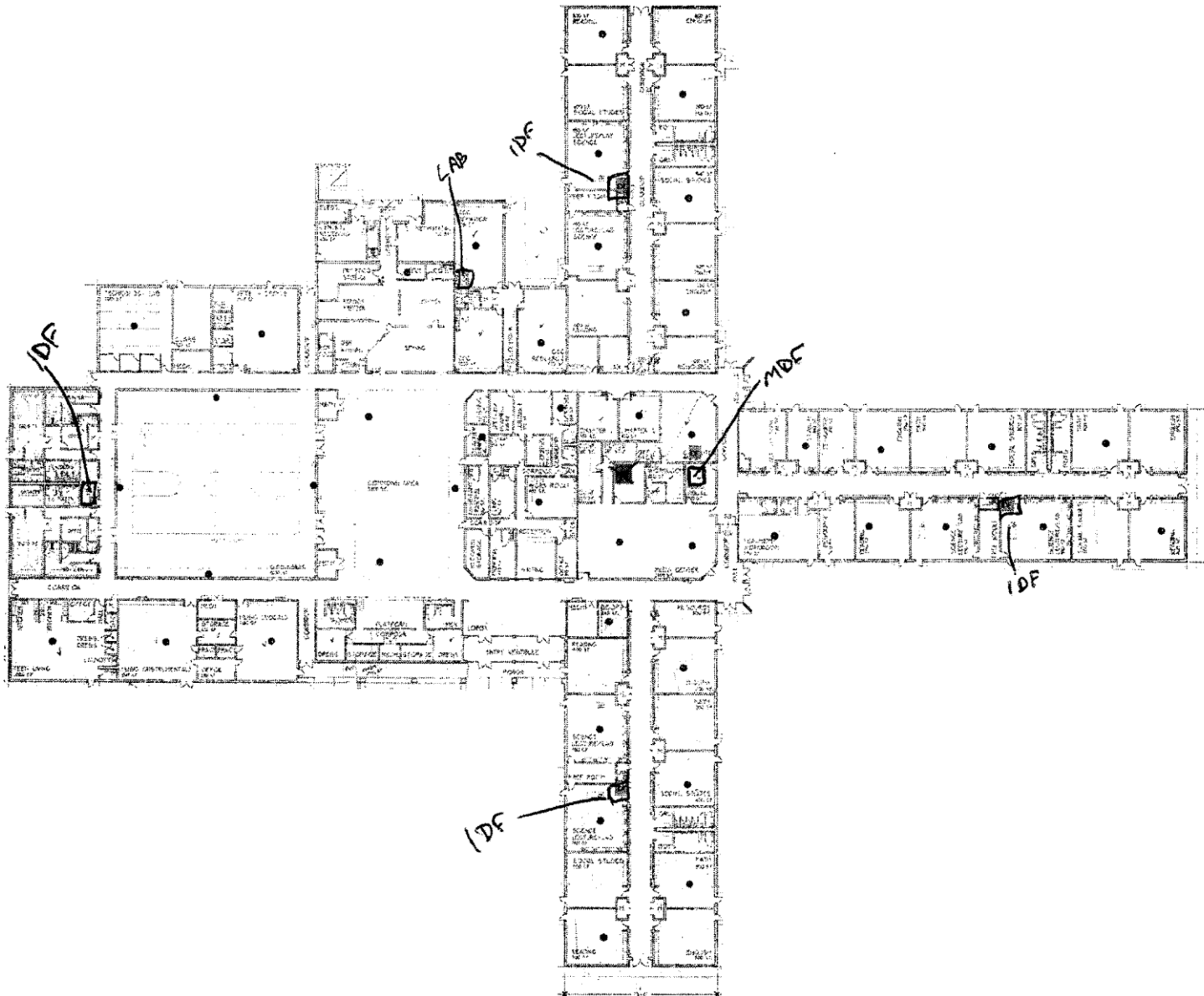




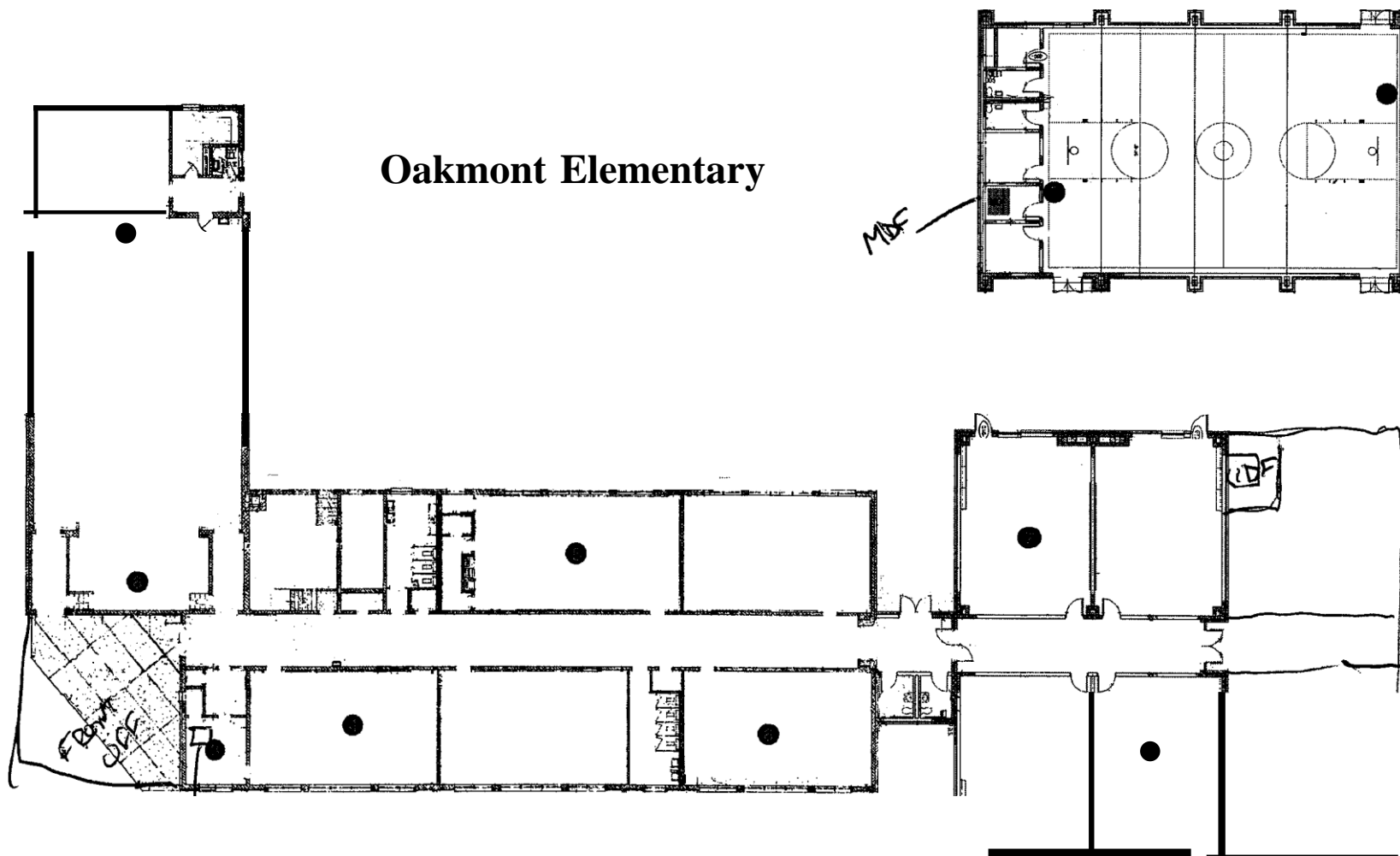
## R.T Fisher Alternative School



# Rucker-Stewart Middle School



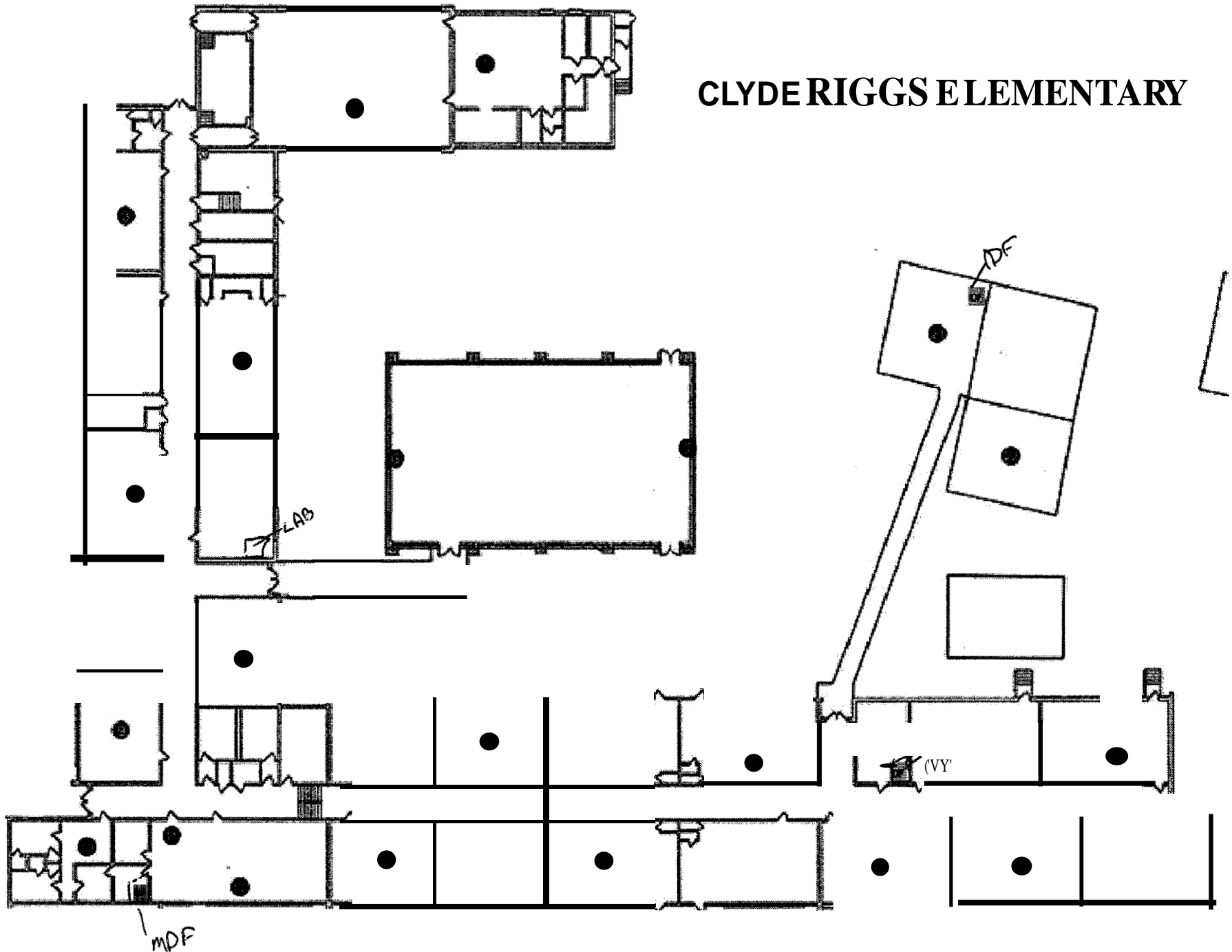
## Oakmont Elementary





# Watt Hardison Elementary

## CLYDE RIGGS ELEMENTARY



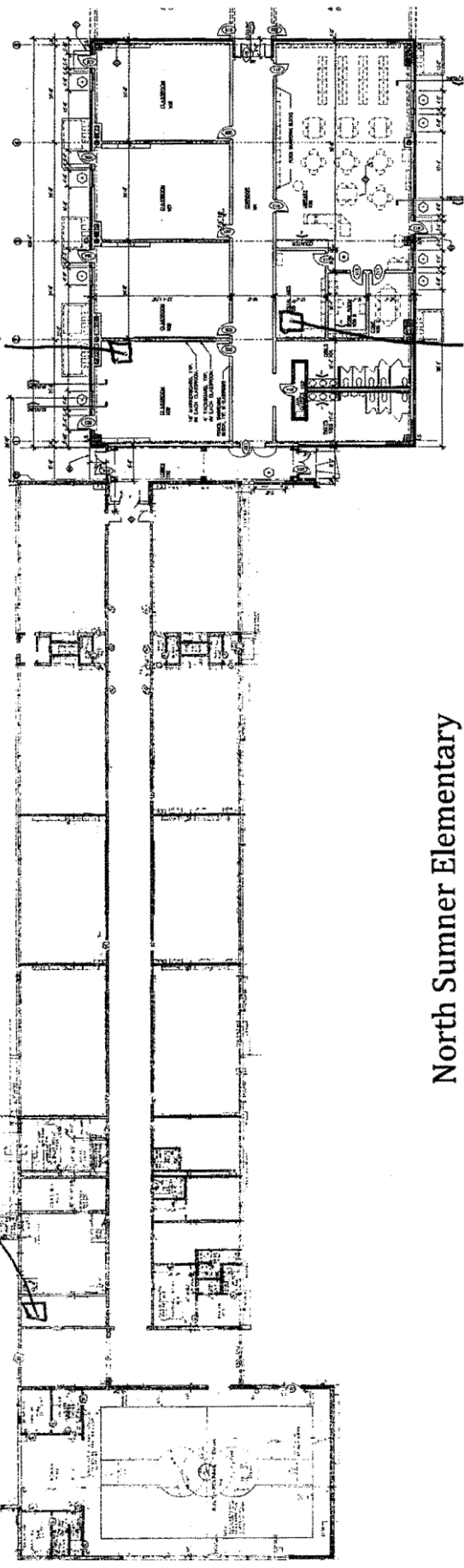
This is a detailed architectural floor plan of the first floor of the World Trade Center. The plan shows the layout of the Twin Towers, which are the two tall, rectangular structures on the left side of the image. The towers are connected by a series of corridors and stairs. To the right of the towers is a large, open area labeled 'DOF' (Downtown Office). This area contains several smaller rooms, including a 'RECEPTION' area, a 'LOBBY', and a 'CONFERENCE' room. The plan also shows various other rooms, such as 'OFFICES', 'STORAGE', and 'ELEVATOR' shafts. Handwritten annotations include 'MDF' (Main Distribution Frame) in several locations, indicating the placement of the communication equipment. The plan is oriented with North at the top.

1-1

CAR

101

107



North Sumner Elementary

**All quantities are approximate and subject to change with final design**

Name of Bidder:

SPIN:

Submitted by:

Title:

Date:

**REQUESTING MAKE AND MODEL # AS LISTED OR EQUIVALENT**

Ref Line #	Site	Quantity	Type of Equipment	Model	Unit Cost \$	Extended Cost \$
1	Guild Elementary	35	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
2	Guild Elementary	15	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
3	Guild Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
4	Guild Elementary	11	Racks and wall-mount cabinets - 1 MDF and 10 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
5	Guild Elementary	720	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
6	Guild Elementary	10	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
7	Guild Elementary	400	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
8	Guild Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
9	Guild Elementary	1	Shipping and Handling			0.00

						0.00
10	Oakmont Elementary	15	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
11	Oakmont Elementary	7	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
12	Oakmont Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
13	Oakmont Elementary	4	Racks and wall-mount cabinets - 1 MDF and 3 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
14	Oakmont Elementary	336	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
15	Oakmont Elementary	3	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
16	Oakmont Elementary	160	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
17	Oakmont Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
18	Oakmont Elementary	1	Shipping and Handling			0.00
19	Howard Elementary	35	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
20	Howard Elementary	10	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
21	Howard Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
22	Howard Elementary	5	Racks and wall-mount cabinets - 1 MDF and 4 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00

23	Howard Elementary	480	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
24	Howard Elementary	4	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
25	Howard Elementary	440	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
26	Howard Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
27	Howard Elementary	1	Shipping and Handling			0.00
28	North Sumner Elementary	20	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
29	North Sumner Elementary	7	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
30	North Sumner Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
31	North Sumner Elementary	5	Racks and wall-mount cabinets - 1 MDF and 4 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
32	North Sumner Elementary	336	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
33	North Sumner Elementary	4	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00

34	North Sumner Elementary	240	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
35	North Sumner Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
36	North Sumner Elementary	1	Shipping and Handling			0.00
37	Watt Hardison Elementary	25	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
38	Watt Hardison Elementary	10	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
39	Watt Hardison Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
40	Watt Hardison Elementary	4	Racks and wall-mount cabinets - 1 MDF and 3 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
41	Watt Hardison Elementary	480	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
42	Watt Hardison Elementary	3	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
43	Watt Hardison Elementary	400	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
44	Watt Hardison Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
45	Watt Hardison Elementary	1	Shipping and Handling			0.00



46	George Whitten Elementary	25	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
47	George Whitten Elementary	15	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
48	George Whitten Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
49	George Whitten Elementary	7	Racks and wall-mount cabinets - 1 MDF and 6 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
50	George Whitten Elementary	720	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
51	George Whitten Elementary	6	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
52	George Whitten Elementary	400	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
53	George Whitten Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
54	George Whitten Elementary	1	Shipping and Handling			0.00
55	Clyde Riggs Elementary	30	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
56	Clyde Riggs Elementary	10	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
57	Clyde Riggs Elementary	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
58	Clyde Riggs Elementary	6	Racks and wall-mount cabinets - 1 MDF and 5 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00

59	Clyde Riggs Elementary	480	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
60	Clyde Riggs Elementary	5	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
61	Clyde Riggs Elementary	400	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
62	Clyde Riggs Elementary	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
63	Clyde Riggs Elementary	1	Shipping and Handling			0.00
64	Portland East Middle	35	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
65	Portland East Middle	15	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
66	Portland East Middle	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
67	Portland East Middle	8	Racks and wall-mount cabinets - 1 MDF and 7 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
68	Portland East Middle	720	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
69	Portland East Middle	7	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00

70	Portland East Middle	680	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
71	Portland East Middle	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
72	Portland East Middle	1	Shipping and Handling			0.00
73	Rucker Stewart Middle	50	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
74	Rucker Stewart Middle	25	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
75	Rucker Stewart Middle	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
76	Rucker Stewart Middle	7	Racks and wall-mount cabinets - 1 MDF and 6 IDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
77	Rucker Stewart Middle	###	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
78	Rucker Stewart Middle	6	Cabling - 10Gb Fiber MDF to IDF	General Interlock Armored Fiber - 1U 3 panel fiber enclosure - Fiber 1Gb GBIC compatible with Aruba, HP and Brocade - SC to LC 1 meter 50 micron fiber patch cables		0.00
79	Rucker Stewart Middle	960	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
80	Rucker Stewart Middle	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
81	Rucker Stewart Middle	1	Shipping and Handling			0.00

82	R T Fisher Alternative	25	Wireless access points	Functionally equivalent to Aruba IAP-205 - compatible with Aruba Wireless systems		0.00
83	R T Fisher Alternative	10	Switches	Functionally equivalent to HP 2920-48G-POE+ - compatible with Aruba Wireless systems		0.00
84	R T Fisher Alternative	1	Management software	Functionally equivalent to Aruba Airwave and Clearpass - compatible with Aruba Wireless systems		0.00
85	R T Fisher Alternative	1	Racks and wall-mount cabinets - 1 MDF	6 ft open floor anchored rack, 12U hinged wall mount rack enclosure with front door		0.00
86	R T Fisher Alternative	480	Connectors	Equivalent to Panduit Modular connectivity - 1 ft copper CAT 6 patch cable from Modular Panel to Switch - 2 24 port panels with 48 port switch between - No vertical or horizontal cable management - Room Number and Drop Number clearly marked on Panels		0.00
88	R T Fisher Alternative	480	Cabling - CAT 6 - 8 drops per room	General CAT 6 - Room Number and Drop Number clearly marked on Port - 2 drops in ceiling with long maintenance loop - 2 drops in wall opposite of White Board with single gang box and 2 modular CAT 6 jacks - 4 drops in wall (not the White Board wall) with single gang box and 4 modular CAT 6 jacks		0.00
89	R T Fisher Alternative	1	Removal of existing wiring and rewire entire building to new standard.	Existing pathways can be used		0.00
90	R T Fisher Alternative	1	Shipping and Handling			0.00