IT315

**Wired Network Proposal for Maury High School**

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PART I: WRITING PLAN AND BUDGET

The wired network plan for Maury High School includes two Ethernet ports in each classroom and office, totaling 88 outlets. All cable runs will originate from the basement, where four telecommunications closets and a central equipment room are located. Each outlet will be connected using Cat6 cabling routed vertically through the building as needed. Cable length estimates are based on an average of 150 feet per drop, with an additional 20% buffer for slack, resulting in a total of approximately 16,000 feet of cable. The budget includes the cost of cabling, RJ45 jacks, wall plates, and patch panels. A labeled floor plan shows the basement layout with the proposed locations for all telecom closets and the main equipment room.

Item	Quantity	Unit Price	Total Cost	Notes
Cat6 Cable (1000 ft)	16	$200	$3,200	16,000 ft total
RJ45 Ethernet Outlets	88	$2	$176	Two per room
Wall Plates	88	$1	$88	One per outlet
Patch Panels	5	$80	$400	4 Closets + 1 main
Total	-	-	$3,864	

Pricing is based on current listings from Amazon and similar vendors (As of 2025.)

BASEMENT PLAN, MAURY HIGH SCHOOL   (See next page)
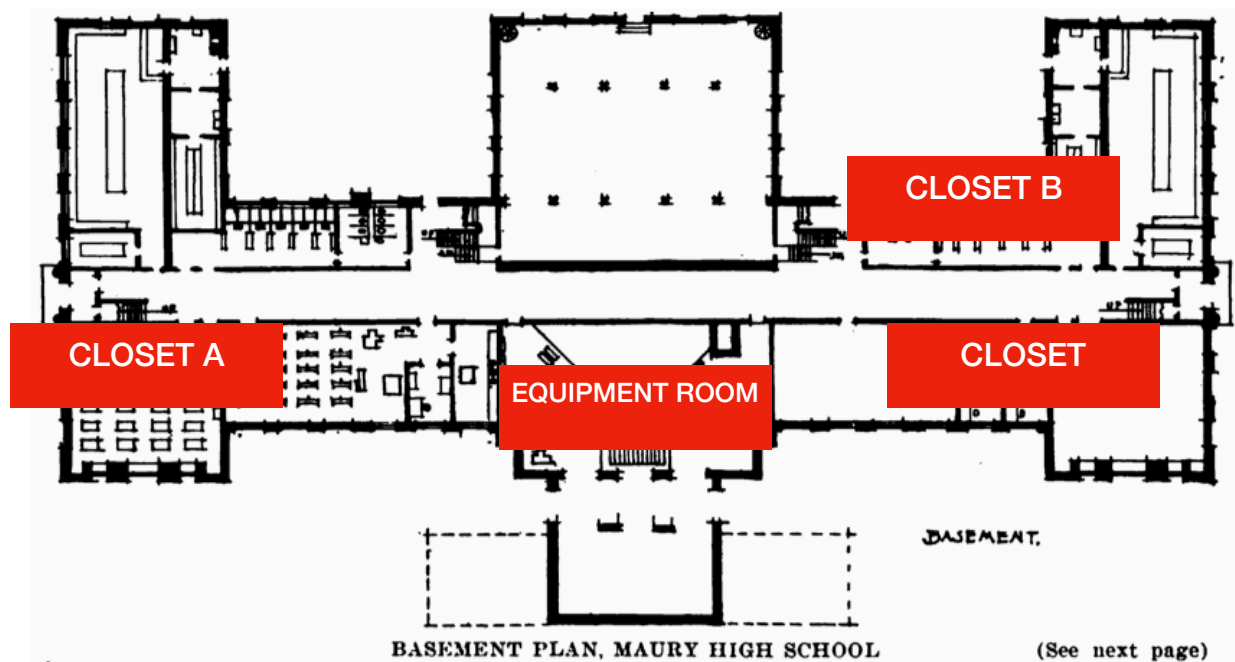
PART II: EQUIPMENT PLAN AND BUDGET

The network equipment for Maury High School is designed to support a total of 96 Ethernet ports. This includes coverage for all classroom and office connections, along with additional capacity to account for future expansion and redundancy. Two 48-port managed switches will be installed in basement telecom closets, and one 24-port managed switch will serve as backup or overflow. Patch cables will connect each patch panel to the switches, while surge protectors and mounting brackets will support power and physical installation. Each telecommunications closet will contain one switch, with the basement equipment room managing Internet access and backup connections.

Item	Quantity	Unit Price	Total Cost	Notes
Managed 48-port Switch	2	$300	$600	Basement closets A & B
24-port Switch	1	$150	$150	Basement closts C
Patch Cables (3ft)	100	$2	$200	Closet patch panel switch
Switch Mounting Brackets	3	$20	$60	One per switch
Surge Protectors	4	$30	$120	Power for each location
Total	-	-	$1,130	

***Pricing is based on current listings from Amazon and similar vendors (As of 2025.)**

PART III: FIREWALL, VLAN DESIGN, AND SECURITY PLAN

To secure the network at Maury High School, a Fortinet FortiGate 60F firewall will be installed in the basement equipment room to manage and filter traffic between the internal network and the Internet. The design includes separate VLANs to isolate staff and student traffic, improving security and control. The firewall will allow custom traffic rules to permit or block access between internal devices and external websites. Subnets will be assigned to each VLAN to simplify traffic routing and management. This setup helps protect sensitive data, prevent unauthorized access, and ensure stable Internet use across the school.