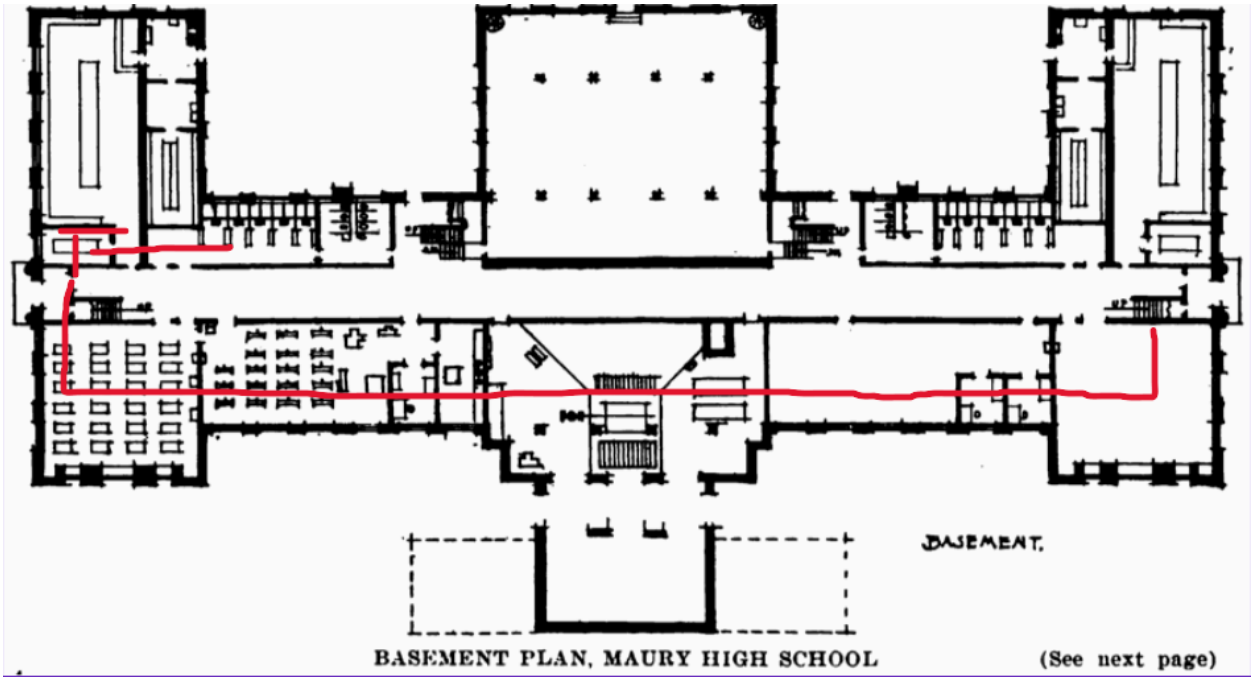
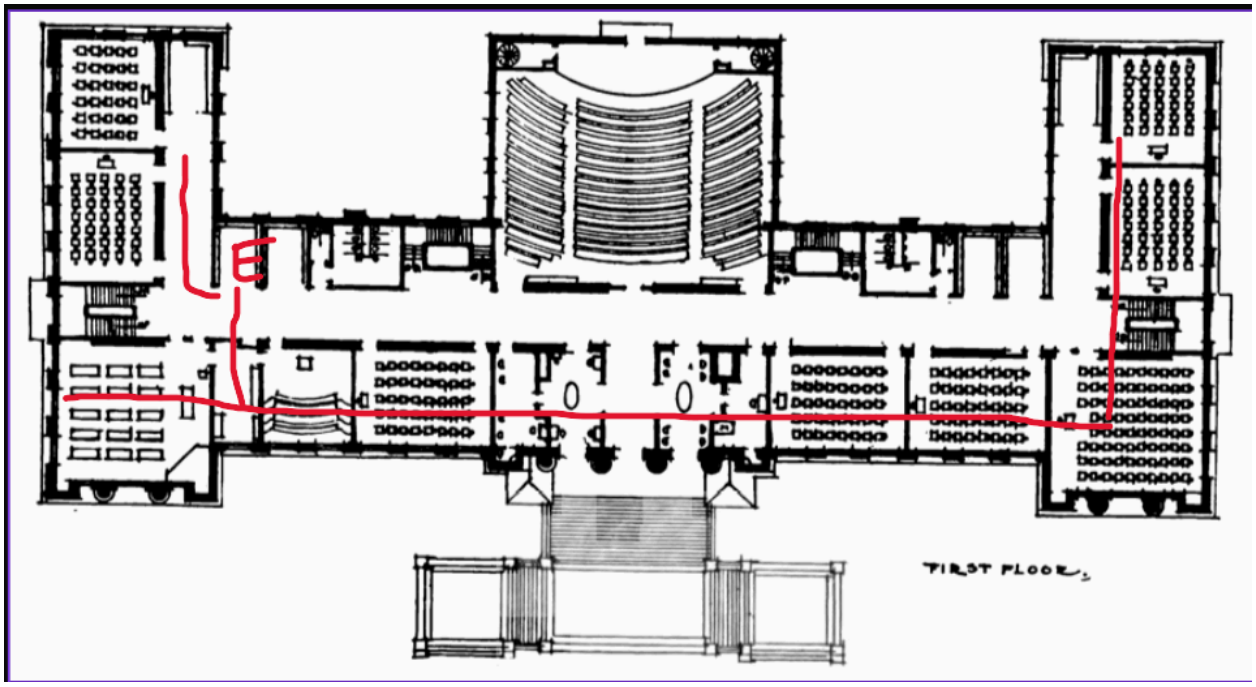
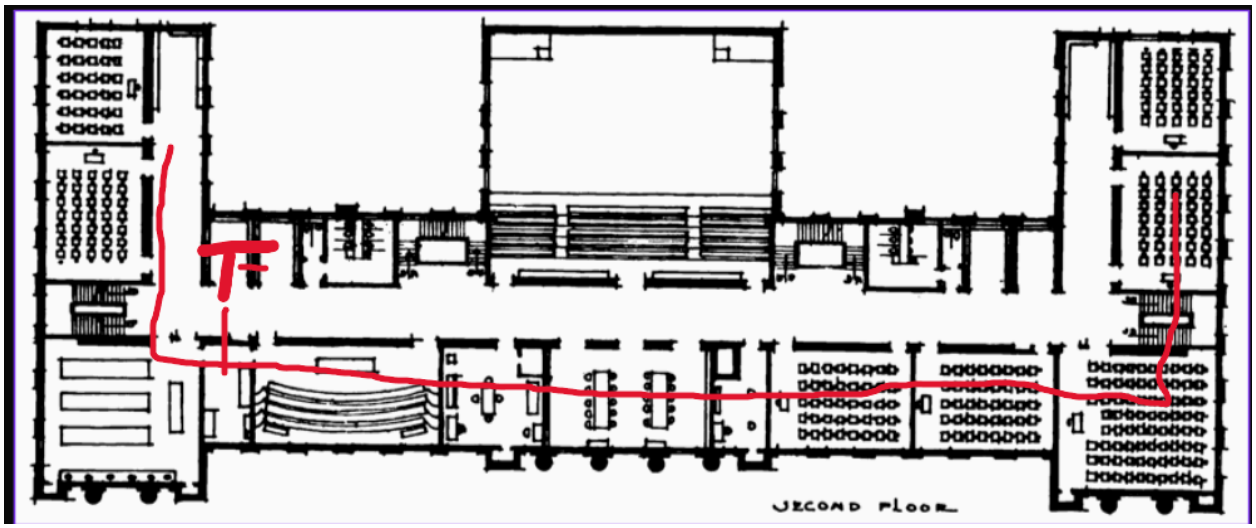
Maury Hall: 300 ft = 19 cm = 16 ft per cm



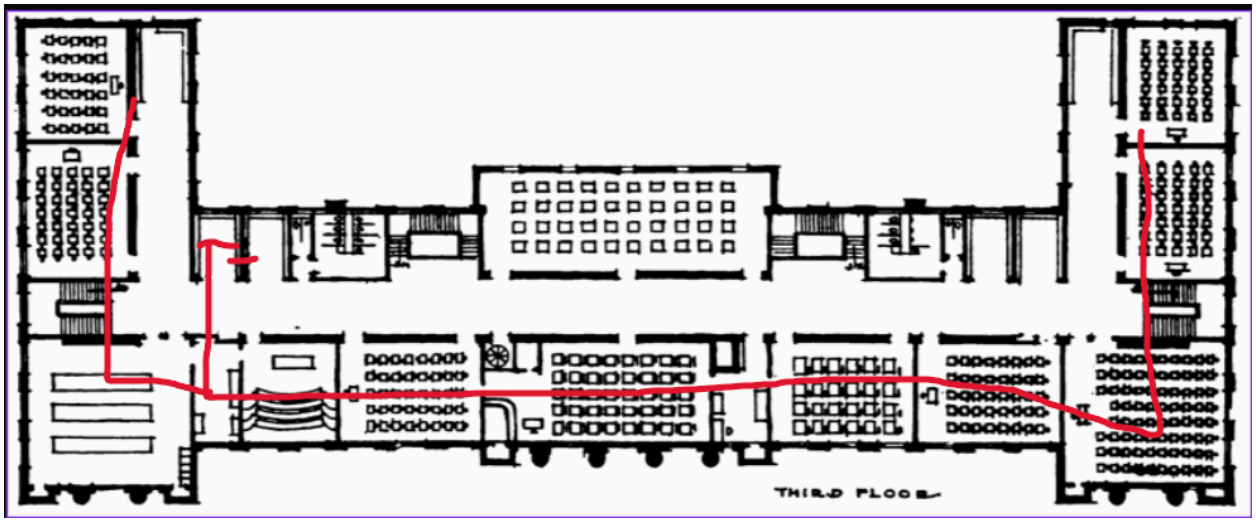
Basement: 19 rooms, ceiling height of 30 ft. One telecom cabinet on the far left hand side. The cable runs the length of the building, so the longest is 18cm (288ft). The shortest is 1cm (16ft). Making the average 9.5cm(152ft). There are 20 rooms on this floor with two wires running to each, so 40 wires with an average of 152ft is 6,080ft plus 30ft to run the trunk line to the ceiling.



The first floor has 21 rooms with the cable running 19cm(300ft) at the longest point and 2cm(32ft) at the shortest.. The average length is 10.5cm(168ft). 21 rooms with 2 cables each is 41 lines. With the 30ft for the ceiling the total length is 6,918ft.



The second floor has 21 rooms with the cable running 16cm(256ft) at the longest point and 1cm(16ft) at the shortest.. The average length is 8.5cm(136ft). 21 rooms with 2 cables each is 41 lines. With the 30ft for the ceiling the total length is 5,606ft.



The third floor has 21 rooms with the cable running 16cm(256ft) at the longest point and 1cm(16ft) at the shortest.. The average length is 8.5cm(136ft). 21 rooms with 2 cables each is 41 lines. With the 30ft for the ceiling the total length is 5,606ft.

Total length is 24,240ft. Using the Eaton Tripp Lite Series Cat6 Gigabit Solid Core UTP PVC Bulk Ethernet Cable, Gray, 1000 ft. (304.8 m), TAA - bulk cable - N222-01K-GY - Cat 6 Cables - CDW.com. You will need 25 boxes at $277 each. It comes out to $606,000. Each of the 82 rooms will need two cables, two RJ45 connectors, one wall plate, and two outlets.

164 RJ45 connectors IDEAL 50-Pack Cat6 Rj45 Modular Plug 85-362 at Lowes.com. Will need 4 sets of 50 at $31.98 it comes out to be $127.92.

82 wall plates Commercial Electric White 2-Port 1-Decorator/Rocker/1-Duplex Plastic Wall Plate (1-Pack) 5002-WH - The Home Depot. 2.78 a piece x 82 = $227.96

164 RJ45 outlet Cat6 Keystone Jack 180 Degree UTP Punch Down - Infinity Cable Products. 162 x 1.38 = $226.32.

PART 2 SWITCHES

The basement has 40 wires so we need 44 port switch for the telecoms closet. Amazon.com: Cisco Catalyst 1300-48T-4G Managed Switch, 48 Port GE, 4x1GE SFP, Limited Lifetime Protection (C1300-48T-4G) : Electronics $985 for one.

The first floor has 42 + 10% = 46 wires. equipment room needs the core switch and one work group switch. Cisco C9300X-24Y-E 24x 25G SFP28 Catalyst 9300X Switch Price & Datasheet x 1 $9,629.00 and Amazon.com: Cisco Catalyst 1300-48T-4G Managed Switch, 48 Port GE, 4x1GE SFP, Limited Lifetime Protection (C1300-48T-4G) : Electronics x 1 = $985.

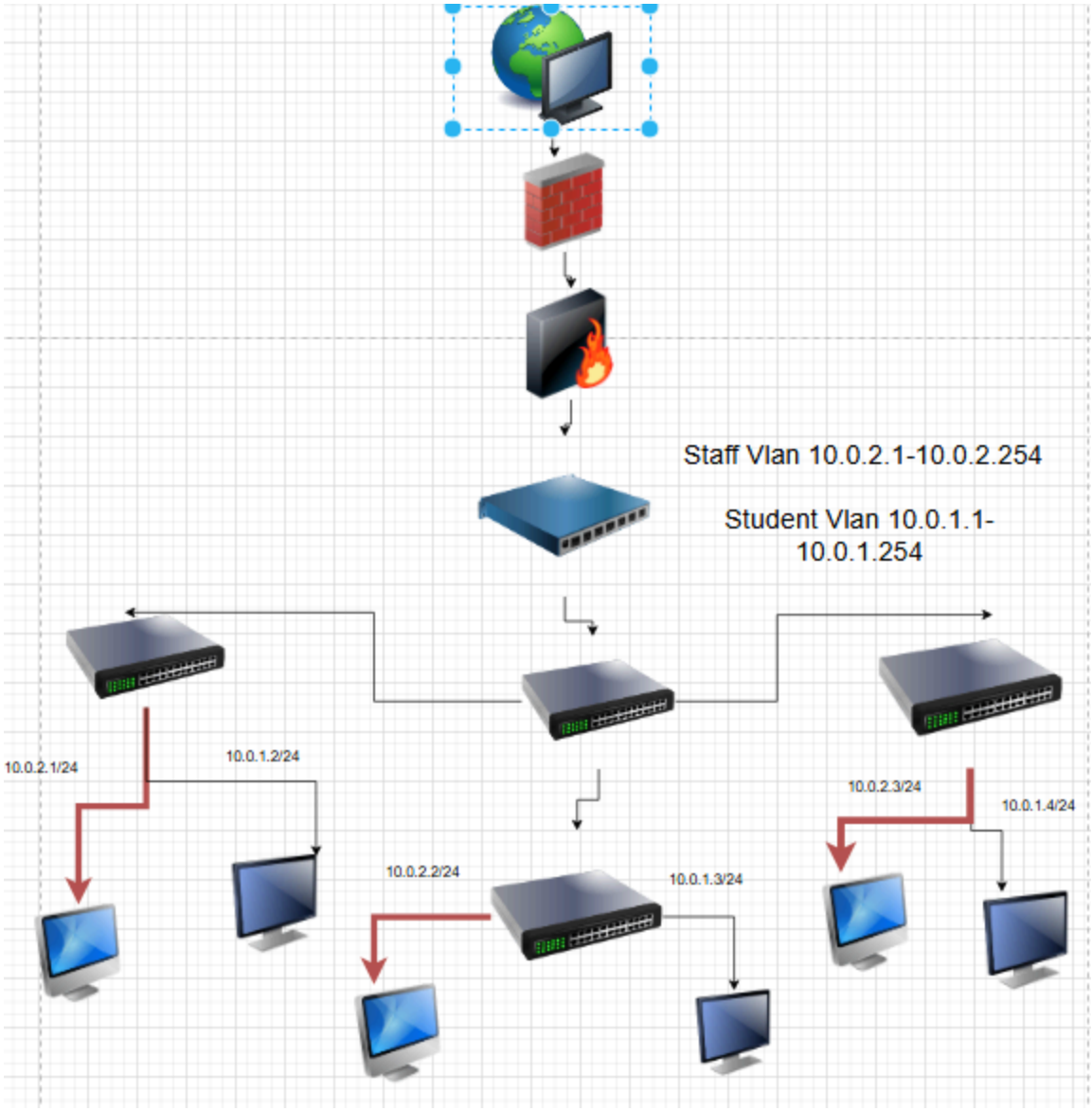
The second floor telecoms closet will have 42 wires plus 10% = 46 ports on the work group switch. Amazon.com: Cisco Catalyst 1300-48T-4G Managed Switch, 48 Port GE, 4x1GE SFP, Limited Lifetime Protection (C1300-48T-4G) : Electronics.

The third floor telecoms closet will have 42 wires plus 10% = 46 ports on the work group switch. Amazon.com: Cisco Catalyst 1300-48T-4G Managed Switch, 48 Port GE, 4x1GE SFP, Limited Lifetime Protection (C1300-48T-4G) : Electronics.

To account for 182 ports we will need 182 patch cables. Cat6 Blue Copper Ethernet Cable, Snagless Boot, 6in $1.94 x 182 = $353.08.

FIREWALL

Netgate 8300 TAA pfSense+ Security Gateway x 1 = $5,59900


Staff Vlan 10.0.2.1-10.0.2.254
Student Vlan 10.0.1.1-10.0.1.254
10.0.2.1/24
10.0.1.2/24
10.0.2.2/24
10.0.1.3/24
10.0.2.3/24
10.0.1.4/24



Teacher



Internet



Core



Student



Workgroup



Router



Firewall