Case Analysis

PART 1

Telecomm Closet

BASEMENT.

BASEMENT PLAN, MAURY HIGH SCHOOL   (See next page)

Telecomm Closet

FIRST FLOOR.

Equipment Room

UECOND FLOOR

Telecomm Closet

THIRD FLOOR
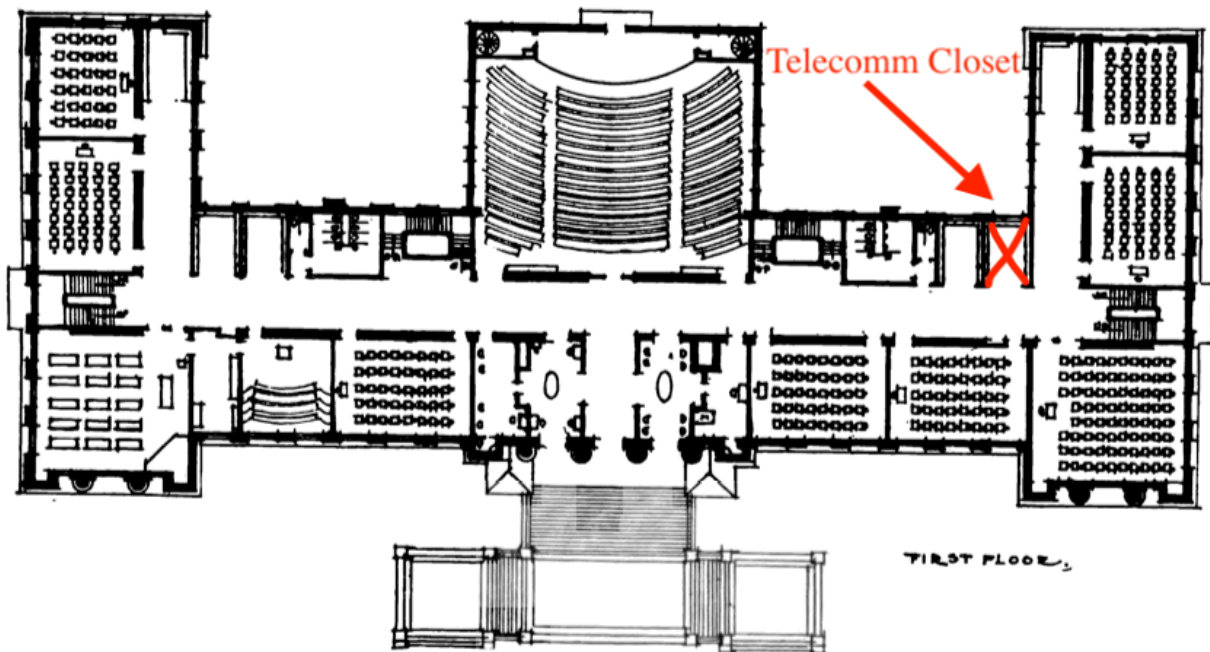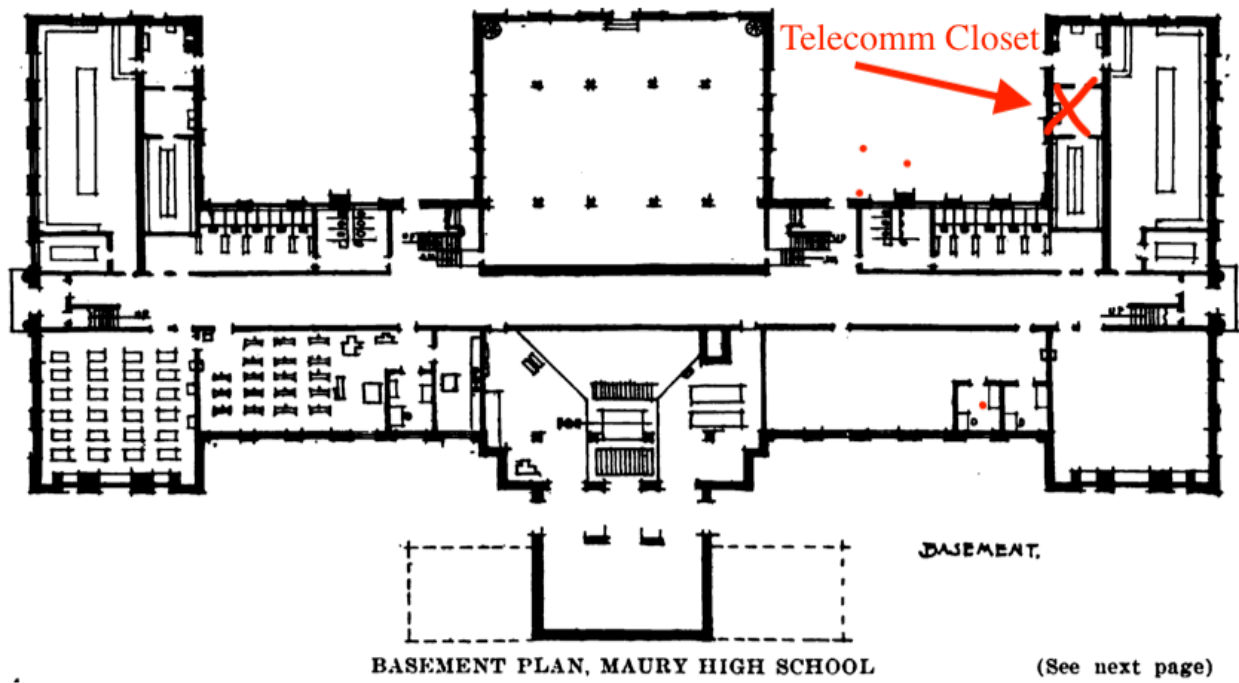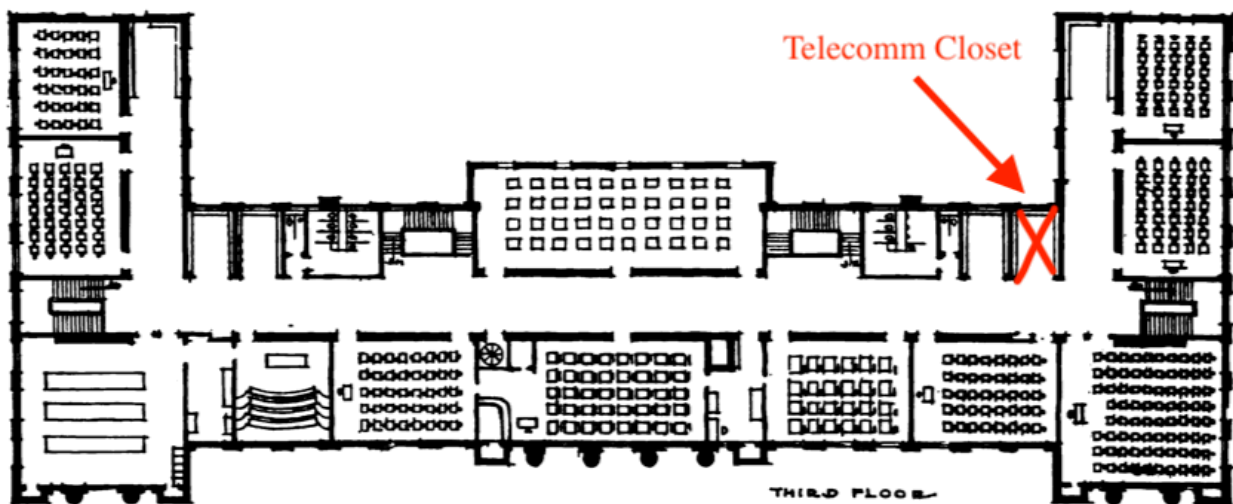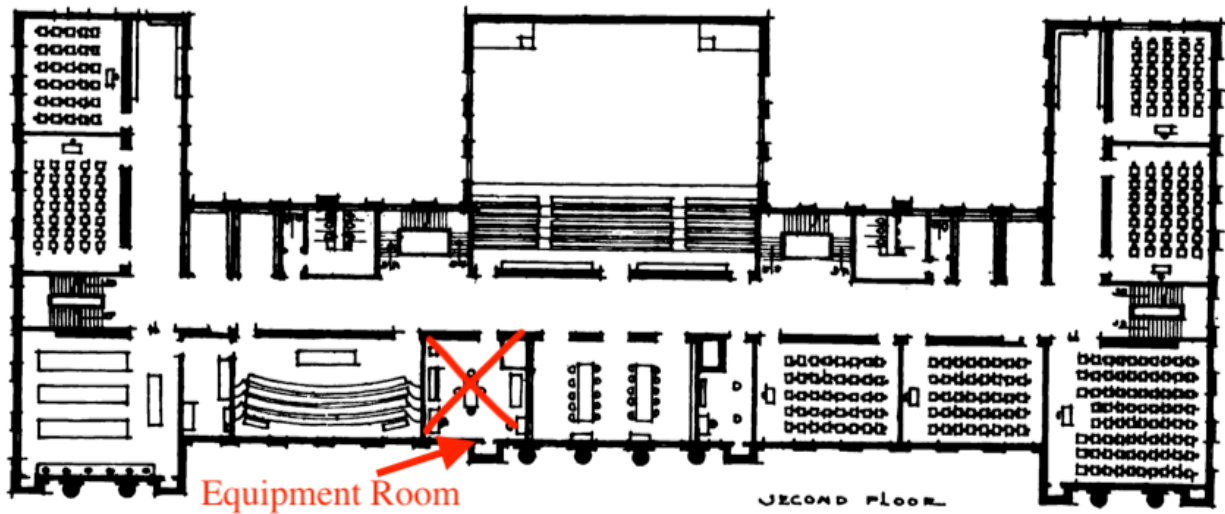
Map Ratio = 1:327

28cm = 300ft

1cm = 10.73ft

Basement Longest / Shortest = 21cm (225.30ft) & 3cm (32.19ft) = AVG of 12cm (128.74ft)

Basement Total Cables = 26 rooms * 2 cables per room = 52 cables * 128.74ft = **6694.48ft**

First Floor Longest / Shortest = 21cm (225.30ft) & 3cm (32.19ft) = AVG of 12cm (128.74ft)

First Floor Total Cables = 23 rooms * 2 cables per room = 46 cables * 128.74ft = **5922.04ft**

Second Floor Longest / Shortest = 19cm (203.84ft) & 3cm (32.19ft) = AVG of 11cm (118.01ft)

Second Floor Total Cables = 22 rooms * 2 cables per room = 44 cables * 118.01ft = **5192.44ft**

Third Floor Longest / Shortest = 21cm (225.30ft) & 3cm (32.19ft) = AVG of 12cm (128.74ft)

Third Floor Total Cables = 22 rooms * 2 cables per room = 44 cables * 128.74ft = **5664.56ft**

Total Cabling = **23473.52ft**

Total Cabling Price = 23473.52ft / 1000ft = 24 packs * $216.99 = **$5,207.76**

Total RJ45 Price = 93 rooms * 2 cables * 2 RJ45 = 372 RJ45 / 100 = 4 packs * $34.99 = **$139.96**

Total RJ45 Keystone Price = 93 rooms * 2 outlets = 186 keystones * $1.38 = **$256.68**

Total Wall Plate Price = 93 rooms / 2 = 47 plates / 10 per pack = 5 packs * $12.99 = **$64.95**

Total Patch Panel Price = 5 panels * $101.99 = **$509.95**

Total of Part 1 = **$6,179.30**

PART 2

Patch Panel Cable to Switch = 93 rooms * 2 cables = 186 patch cables * $0.99 = **$165.54**

Work Group Switch (Telecomm Closets) = 3 48-port switches * $1029.25 = **$3,087.75**

Core Switch (Equipment Room) = 1 24-port core switch * $7,160.00 = **$7,160.00**
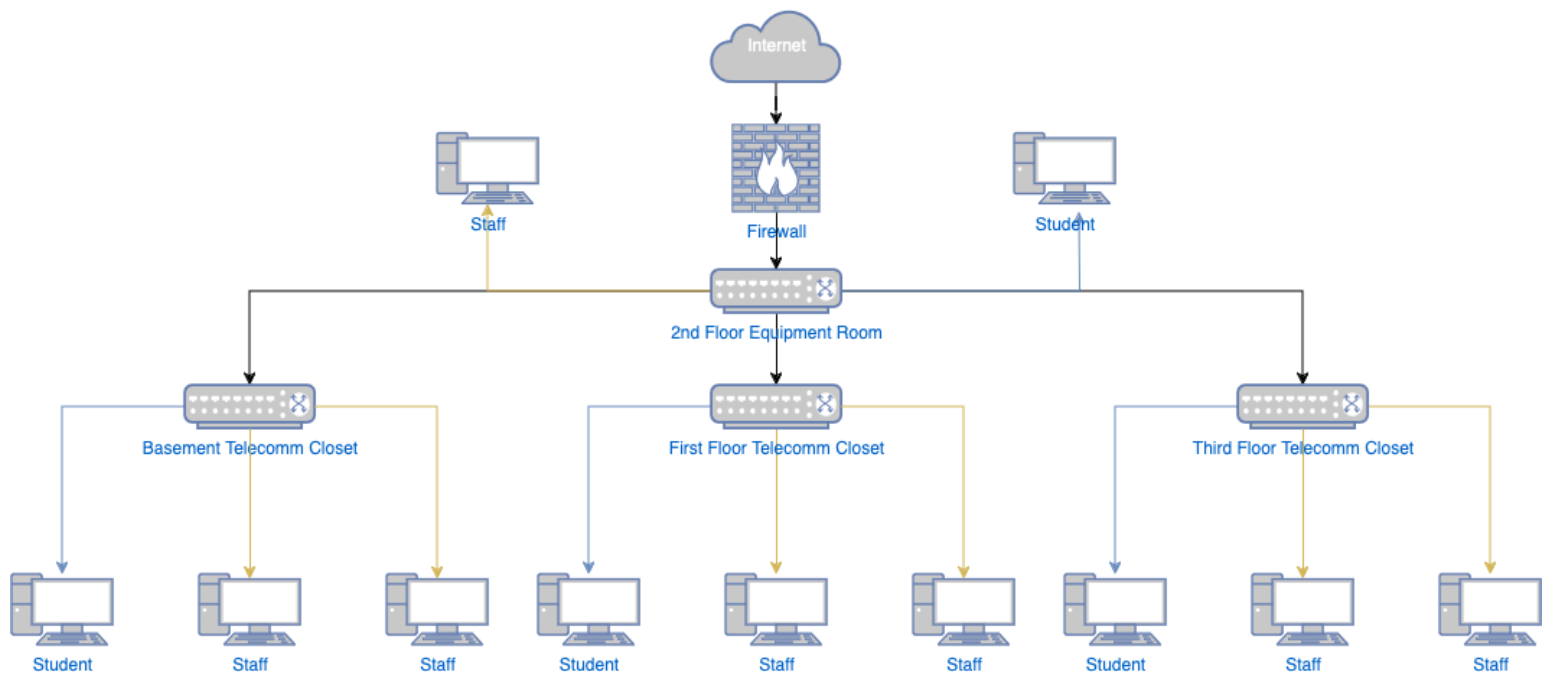

Total of Part 2 = **$10,413.29**

PART 3

Firewall / Router by PfSense with TAC = 1 * $4096.00 = **$4,096.00**

Total of Part 3 = **$4,096.00**

The arrows are color coded to indicate VLANs for the subnet. Students are in light blue while staff are in light brown / orange. Each switch can be configured to have its own VLAN. Additionally, if needed, the firewall can enable the VLAN feature as well to create more subnets for the existing network.

SUMMARY (Total Cost)

In total, the cost of the networking equipment for Maury High School will cost **$20,688.59**.