Mackenzie Coleman
Hands-On Assignment #3
2/6/2022
IT 315

Total number of rooms and offices needing 2 outlets / 2 cables running to them = 193

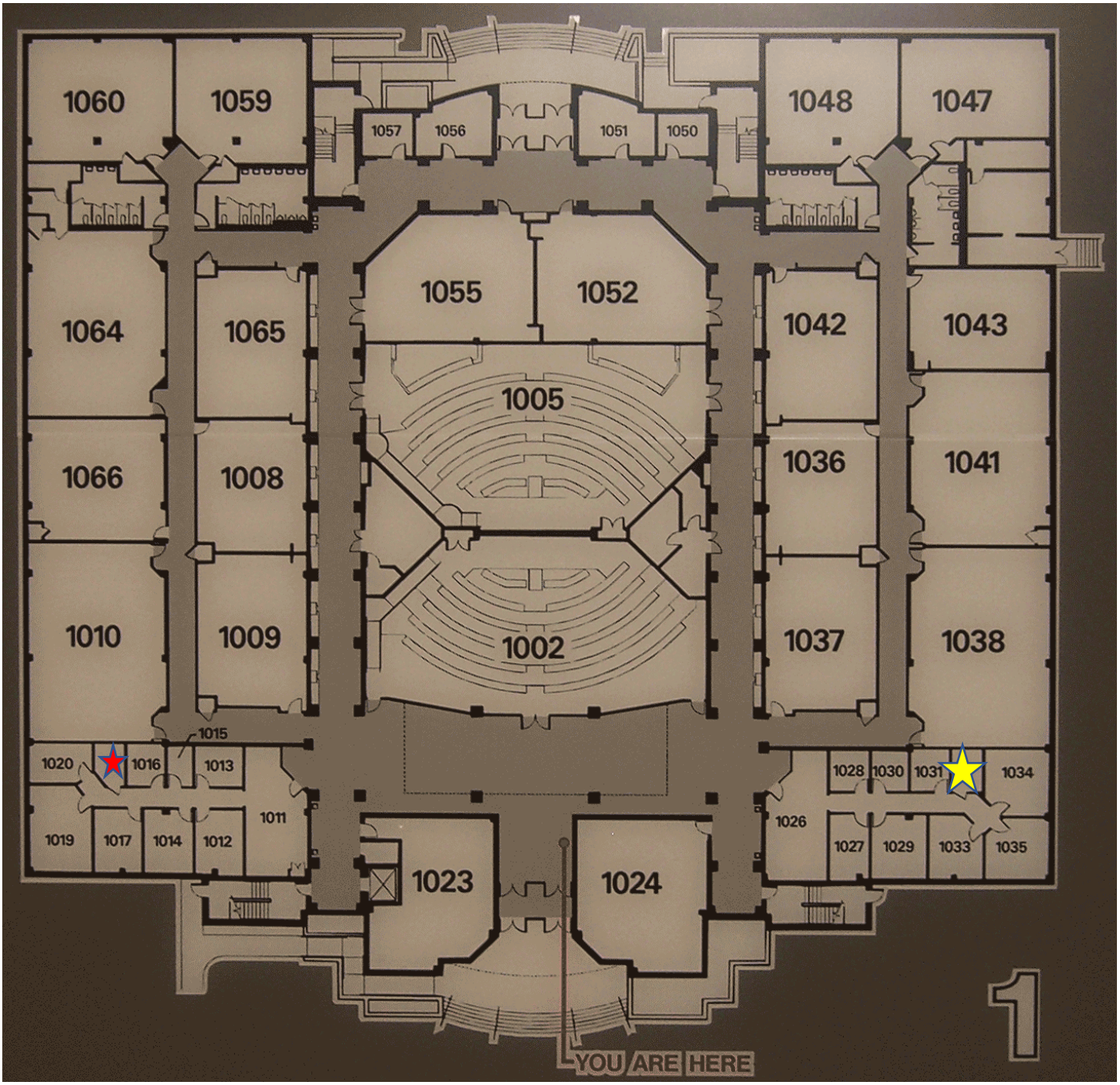
193 classrooms/offices * 1 wall plates per room (2outlets per wall plate) = 193 outlets total

193 classrooms/offices * 2 cables running to each classroom = 386 cables

386 cables / 48 (number of ports per patch panel) = 8.041 rounded up to 9 to ensure the appropriate number of ports. 9 48-port patch panels

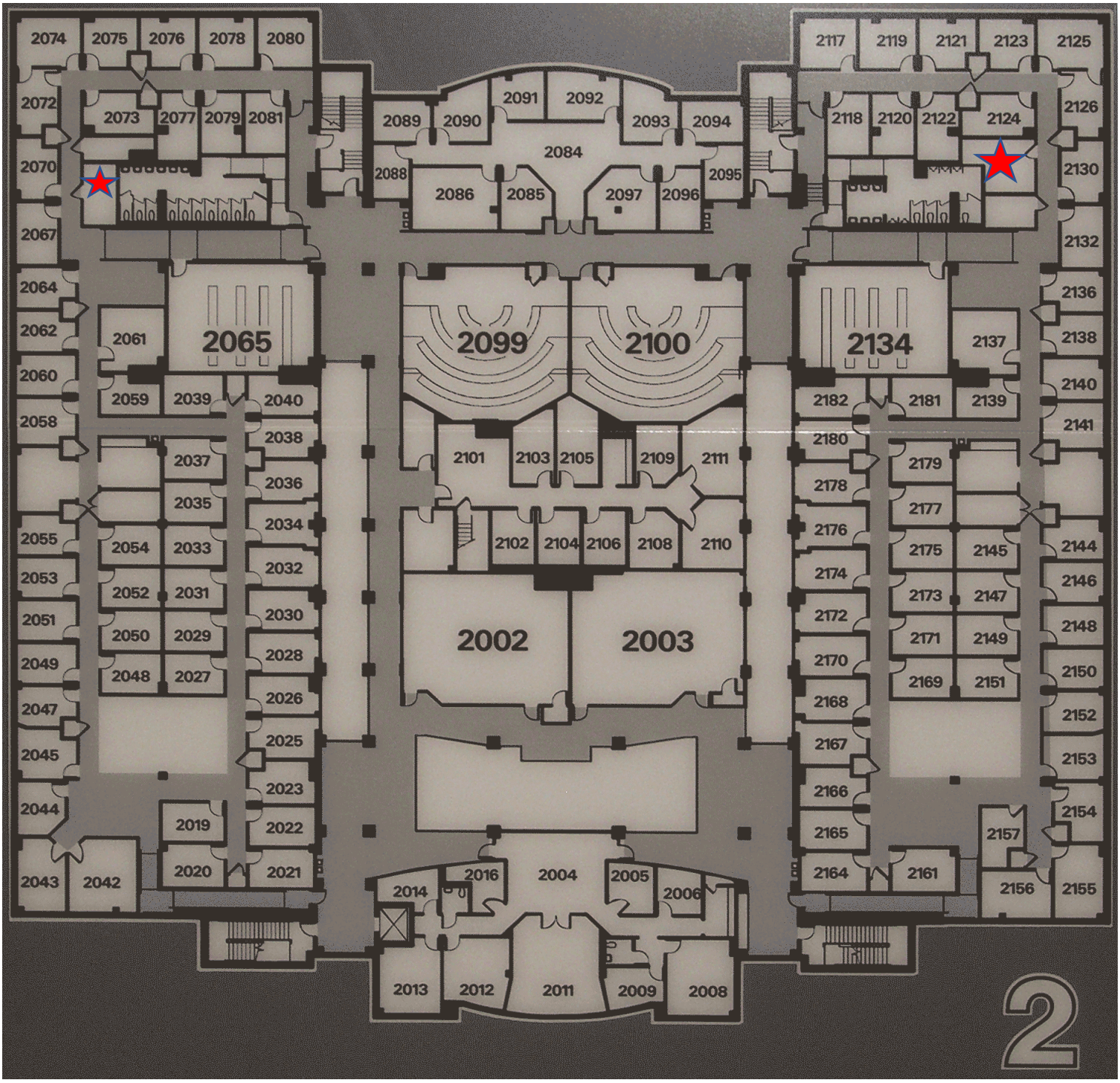
| **Item** | **Quantity** | **Price** | **Total** | **Source** |
|---|---|---|---|---|
| ICC CAT5e Patch Panel | 9 | $174.01 each | $1,566.09 | Amazon.com |
| Sancable-Ethernet Wall Outlet | 193 | $7.89 each | $1,522.77 | Amazon.com |
| Ethernet 300ft Shielded Cat5e | 4 | $75.99 each | $303.96 | Amazon.com |
| ------ | -------- | ------- | $3,392.82 | ------ |

To estimate how many 90-meter (295t) cables I will need to buy, I put two rooms on each floor on each side of the building to ensure the cables would reach to all rooms. 65 meters is how wide Constant Hall is which is 213.25 ft. I went ahead and divided 213 by two due to the split sides of the telecom and equipment rooms. I estimate that the each side building will need at least 150ft of cable which is about 45.2 meters.




The yellow star on the first floor of the building indicates the Equipment room. This will be the center of the extended star topology for this wiring.

In this equipment room, there will be 1 48-port patch panels used to connect two cat5e cables to each room on the first floor, 44 classrooms. The red star will indicate a telecom room on the same floor that will also hold 1 48-port patch panel to connect the rooms that aren't connected directly to the equipment room.




The red star indicates the telecommunication room that will be on the second floor of Constant Hall.

In these two  telecommunication room, there will be 7 48-port patch panels used to connect each room upstairs, 149 rooms with two cables per room. The room on the right hand side of the diagram will hold 4 of the 48-port patch panels as it will connect the rooms in the center of the floor. The telecom room on the left will have the remaining 3 48-port patch panels.