PART A: WIRING

I. Riser Cables

A. Usage: Riser cables are routed through the building wireway and riser system to link all telecom rooms together. These include: two broadband coax cables, appropriately sized voice UTP cables, and one 12-strand multimode fiber optic riser cable.

B. Testing: The only riser cables to be tested upon installation are the fiber optic cables.

C. Routing Schemes:

1. Homerun: Cable originates in main telecom room and routes to one satellite telecom room. Each satellite telecom room is connected to the main telecom room with a separate cable.

2. Tree: Cable terminates in a telecom room and passes through most of the other telecom rooms in a path through the building which minimizes the cable length; from this trunk line, branch cables supply telecom rooms not connected by the trunk.

D. Cable Types

1. Broadband cables
   a. Material
      1. Cable
         ♦ Type: 1/2" unsheathed 75-ohm broadband LAN feeder cable, Comm/Scope part number P3-75-500 CA or exact equivalent.
         ♦ Quantity: Two.
   b. Layout and installation
      1. Routing: Tree.
      2. Cables to remain unterminated in initial installation. Cables to remain uncut along cable run.
      3. Excess cable: Each telecom room contains ten feet of excess for each cable.
      4. Mounting: Excess cable shall be coiled and neatly attached to the telecom room plywood.
      5. Splices: None allowed without prior approval from Comtech.
      6. Minimum bend radius: 10.5"

2. Unshielded twisted pair copper
   a. Usage: The copper riser cable(s) will be used for voice communications.
   b. Material
      1. Voice riser cable: Twisted pair 22 AWG solid copper, telephone type, unshielded.
c. Sizing: Calculate cable size based on 1.5 pairs per outlet. Industry standard cable sizes will be used. Multiple cables may be installed in order to achieve the required riser pairs. In typical applications, multiples of 100-pair cables will be used.
d. Routing: Homerun.
e. Termination: Cable terminates directly on 10-pair ADC/Krone disconnect blocks.
f. Excess cable: Sufficient to reach appropriate ADC/Krone blocks plus a minimum 8’ slack loop.
g. Splices: None permitted.

3. Fiber riser cable
   b. Layout and installation
      2. Termination: Cable to be terminated using ST connector panels, Corning part number: CCH-CP06-15T.
      3. Protection: Cable to be routed inside 1” orange plastic flexible innerduct. Innerduct to protrude into each telecom room to ladder rack and have a 3’ length neatly attached to top of ladder rack.
      4. Splices: None permitted.

II. Station Wiring

A. Usage: Station wiring acts as the link between each telecommunications outlet (or station) and the telecom room designated to serve that outlet.

B. Material: Standard Quad Cat5 Bundle

Cables. Voice and Data: Four (4) 4-pair, unshielded twisted pair solid copper #24 AWG Category 5E non-plenum cables with gray jacket. Berk-Tek part number 532141TP.

C. Continuous Cable Runs: No cable shall be spliced at any point along its length. Only continuous unspliced cables may be used in the distribution system.

D. Installation

1. Excess cable: With cable routed to the top of the equipment racks, there shall be 10’ of excess cable bundle length past point where cables reach the rack.

III. Telecommunications Cable Termination

A. In Telecom Room

1. Station Cables - Materials
   a. Type: ADC/Krone series 2 blocks and appropriate mounting hardware. For each 36 outlets to be terminated, install the following:
      Two 19” wide support bars, ADC/Krone part number 6652 2 023-02.
      (72) 8 pair, series 2 disconnect block for mounting bracket, ADC/Krone part number 6036 2 002-00.
Three type 85 label holder for mounting bracket, ADC/Krone part number 6036 2 018-00.

b. Layout: Install type 85 mounting brackets onto two horizontally mounted support bars mounted to equipment rack. Install label block in top slot of each type mounting bracket. Fill in remaining slots with series 2 disconnect blocks as required.

**B. Telecommunications Faceplate**

1. Material
   Faceplate hardware: Faceplate to utilize AMP's ACO, consisting of the following items:
   - One 2-gang almond ABS plastic faceplate AMP part number 558512-1.
   - Four Category 5, RJ45 ACO inserts, AMP part number 558908-1.
   - Two AMP ACO Install Kits, unshielded, AMP part number 406352-1.

**C. Termination in Telecom Room**

Telecom room termination/labeling. Terminate cable C1 of the first outlet in the first position (lower left corner) of one of the panels. Terminate cable C2 on the second position (lower right corner) of that same panel. Terminate cable C3 in the position directly above C1, with C4 terminated directly above C2. Repeat this pattern for subsequent terminations. **Note: It is imperative that termination of quad Cat5 outlets be performed on separate Krone panels and not on Krone panels used for termination of wiring standard outlet UTP cables.** ADC/Krone blocks should be labeled on the side as "C1, C2, . . ."

**D. Termination on Faceplates**

Faceplate termination/labeling. Cables will be terminated in the following positions on the faceplate:
- C1 upper left position
- C2 upper right position
- C3 lower left position
- C4 lower right position
Each jack on the faceplate should be labeled as above. The faceplate itself should be labeled with the telecom room number followed by the range of jack number on the outlet. For example, outlet (faceplate) number 1027-C1/C4 is the first quad Cat5 outlet originating from telecom room 1027. The next outlet would be numbered 1027-C5/C8.

**IV. Communication System Testing:** The communications system shall be tested by the contractor with written results provided to Comtech.